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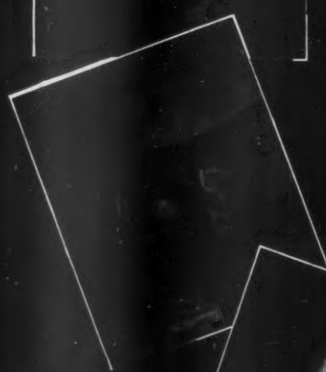

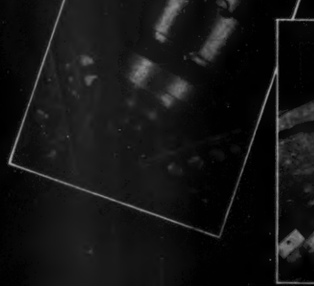

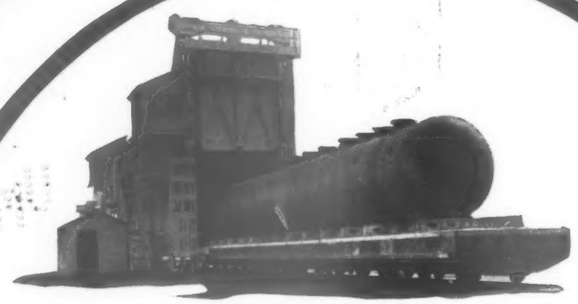

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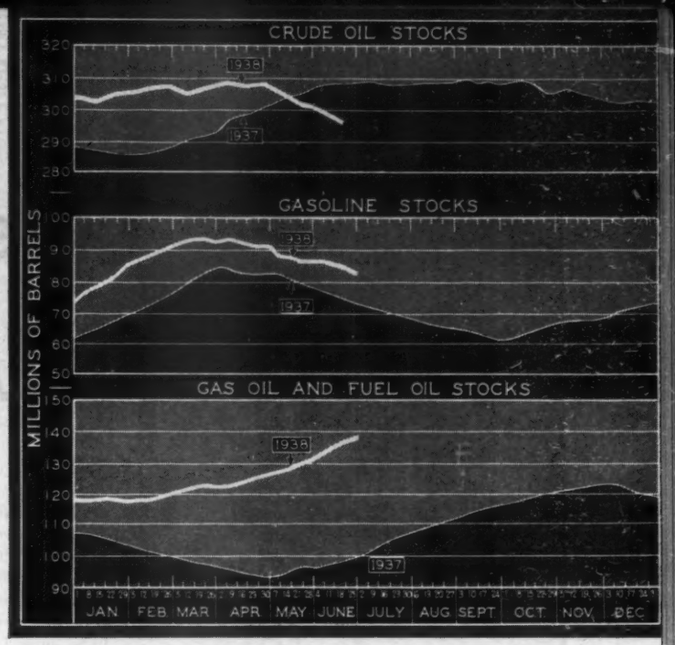

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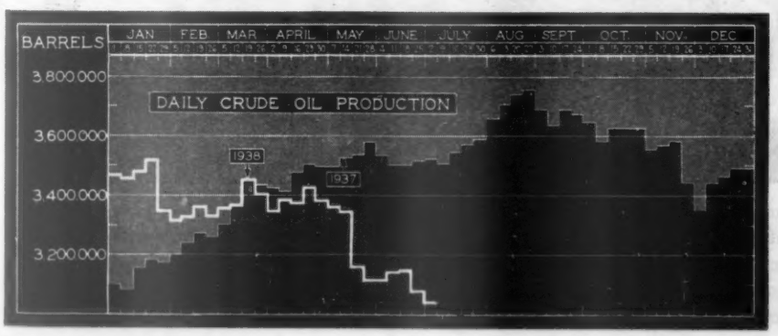
To find outlets for the new crude supply Middle West producers have taken price reductions which spread to the older fields due to competitive conditions.

Considering comparative refining value and transportation costs to markets, these Illinois, Michigan and Kentucky crudes are now priced below Mid-Continent crudes, which are still the source of supply for the greater part of the Middle West market lying east of the Mississippi River. If larger quantities of crude were involved this situation would threaten the stability of Mid-Continent crude schedules. With no large increases in crude output expected in the near future the situation is not considered serious.

Observers feel that should the prospective refinery construction for southern Illinois materialize, a return to a normal price relationship with Mid-Continent probably will develop.

Refinery market trends for the most part continue favorable. There continue to be downward price adjustments in fuel oil and distillate at a few points. The demand for fuel has improved in several areas.



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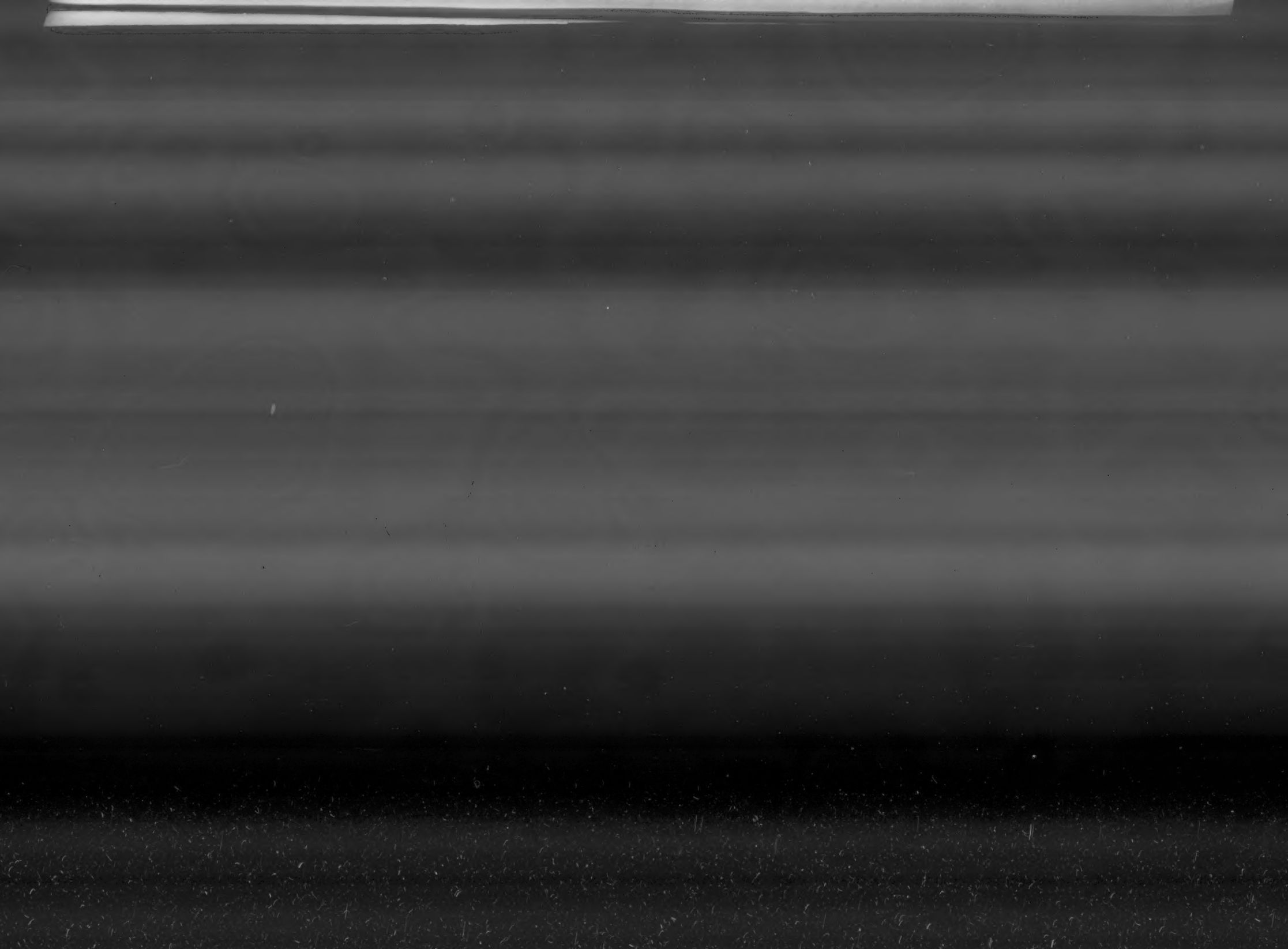
Oklahoma City	73,450	.....	.....	95,225
Fitts	39,175	.....	.....	39,800
Remainder of state	263,950	.....	.....	273,425
Total Oklahoma	376,575	518,400	428,000	408,450
East Texas	364,930	.....	.....	363,849
West Texas	181,119	.....	.....	180,702
North Central Texas	97,867	.....	.....	96,750
Texas Panhandle	65,216	.....	.....	66,548
East Central Texas	88,433	.....	.....	87,296
Gulf Coast Texas	303,739	.....	.....	301,698
Southwest Texas	90,678	.....	.....	91,350
Total Texas	1,191,982	1,360,300	1,359,192	1,188,193
North Louisiana	79,410	.....	.....	79,380
Gulf Coast Louisiana	179,867	.....	.....	179,250
Total Louisiana	259,277	260,600	249,745	258,630
California	663,150	642,300	615,000	665,000
Kansas	143,150	172,300	165,000	152,975
Arkansas	51,100	51,100	.....	46,650
Eastern fields	140,750	149,700	.....	142,500
Michigan	53,469	56,400	.....	53,861
New Mexico	91,070	112,900	101,600	90,890
Rocky Mountain area	75,960	74,200	.....	72,240
Total United States	3,046,483	3,398,100	.....	3,079,389

Decrease, 32,906 bbls. daily.



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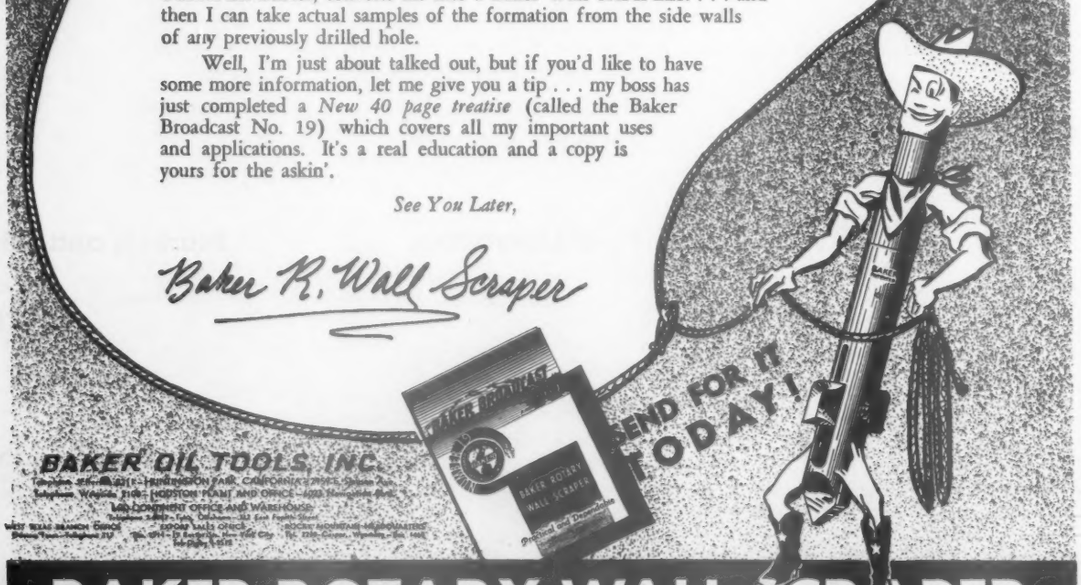

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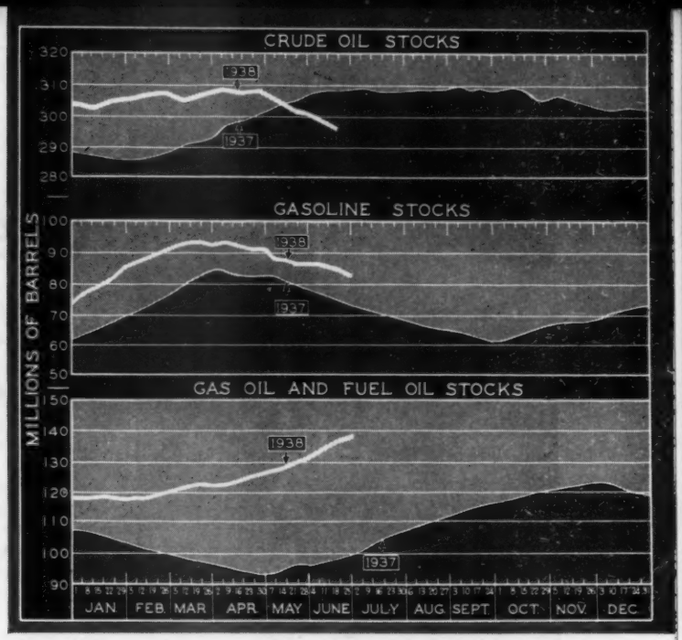
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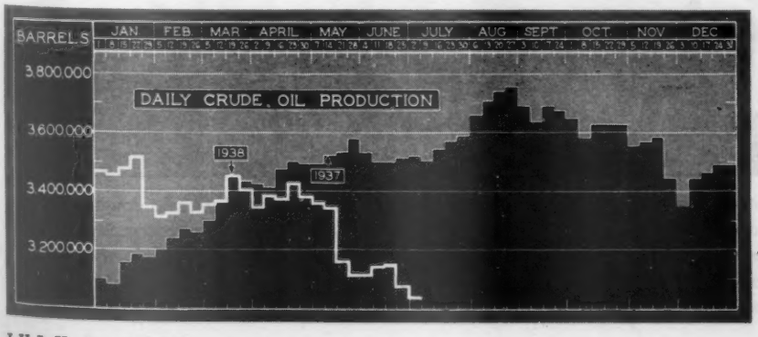

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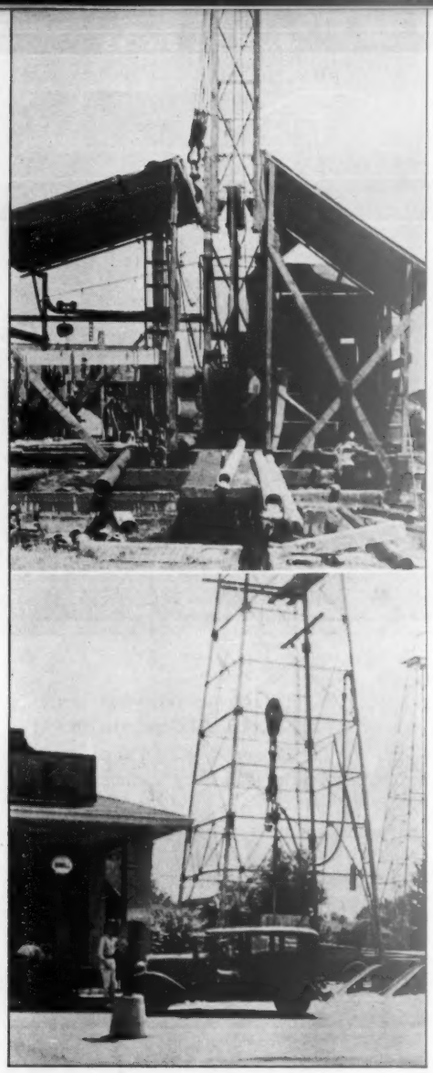
North Central Texas	97,867	.....	.....	96,750
Texas Panhandle	65,216	.....	.....	66,548
East Central Texas	88,433	.....	.....	87,296
Gulf Coast Texas	303,739	.....	.....	301,698
Southwest Texas	90,678	.....	.....	91,350
Total Texas	1,191,982	1,360,300	1,359,192	1,188,193
North Louisiana	79,410	.....	.....	79,380
Gulf Coast Louisiana	179,867	.....	.....	179,250
Total Louisiana	259,277	260,600	249,745	258,630
California	663,150	642,300	615,000	665,000
Kansas	143,150	172,300	165,000	152,975
Arkansas	51,100	51,100	.....	46,650
Eastern fields	140,750	149,700	.....	142,500
Michigan	53,469	56,400	.....	53,861
New Mexico	91,070	112,900	101,600	90,890
Rocky Mountain area	75,960	74,200	.....	72,240
Total United States	3,046,483	3,398,100	.....	3,079,389

Decrease, 32,906 bbls. daily.

Considering comparative refining value and transportation costs to markets, these Illinois, Michigan and Kentucky crudes are now priced below Mid-Continent crudes, which are still the source of supply for the greater part of the Middle West market lying east of the Mississippi River. If larger quantities of crude were involved this situation would threaten the stability of Mid-Continent crude schedules. With no large increases in crude output expected in the near future the situation is not considered serious.

Observers feel that should the prospective refinery construction for southern Illinois materialize, a return to a normal price relationship with Mid-Continent probably will develop.

Refinery market trends for the most part continue favorable. There continue to be downward price adjustments in fuel oil and distillate at a few points. The demand for fuel has improved in several areas.



Contrasts in drilling rigs. Nearly every type of well-drilling outfit may be seen in Centralia. The rotary derricks shown are in the business district

Centralia Town-Lot Passes Peak of Op

By JAMES McINTYRE

CENTRALIA, Ill.—The most intense city-lot drilling campaign that has taken place in any field east of the Mississippi River in many years may be said to have passed the three-quarter pole and to be rounding into the home stretch. It is the development of the Benoist sand within the limits of the city of Centralia, Ill.

Centralia, a city of 13,000 population, lies in parts of two townships, and in parts of two counties. Most of it is in Township 1n-1e, Marion County. The western edge is in Township 1n-1w, Clinton County.

The Centralia field was discovered in section 2-1n-1w, west of the city limits, and the development worked its way southeasterly.

When it was seen that the new field extended into the city oil men swooped down upon Centralia and started a leasing campaign that left few lot owners unsought. The oil men had no regard for the part of the city in which they sought leases. Owners of mansions and owners of homes the most humble, were approached and their signatures sought along the well-known dotted line.

The city council in order to assure an orderly development, and also to see that the city profited by the search for oil, passed an ordinance limiting wells to two to the city block, charging a fee of $100 per well for permits to drill, and requiring the filing of a bond in the sum of $5,000 in each case, as an insurance against damage to, or destruction of property on the block during the operation of drilling and completing the wells. Previous to the passage of the ordinance operators were crowding wells on town lots without regard to spacing rules.

The ordinance required that before a permit to drill could be obtained the operator must have obtained the signatures of the owners of 51 per cent of the property within a block, and must have agreed to share the one-eighth royalty with all the property owners in the block on a basis of their respective percentage share of ownership.

The council did a good stroke of business by leasing the city park on the western edge of town to an operating firm, retaining a 45-per-cent royalty interest for the city in the production obtained from that property, which was directly in the trend of operations.

Every Type of Drilling Rig

Every type of drilling rig from the ancient to the most modern invaded the city and in back yards, between dwellings, on empty lots, on the main business thoroughfare, and even between railroad tracks, derricks and drilling machines were put to work. The ownership of the wells is in the hands of individuals and firms, some of whom are new in the business of producing oil. The largest operator is the Pugh Drilling Co., which came up from the deep South with its rotaries and crews of experienced drillers to get into the producing business in the new Illinois Basin.

West of the city, where operations have been carried on in an orderly way, mostly on 10-acre locations, the Shell, Gulf, and Adams Oil companies have developed much of the field.

There were over 100 producing oil wells inside the city when this was written, and by the time the drilling has come to a close it is expected there will be in excess of 200 oil wells, with much of the eastern side of town perhaps untouched because of what are thought to be unfavorable geological conditions. Up to recently a considerable number of town-lot wells were said to have no pipe line connection, but this condition should be much improved by the increased facilities provided by the Owensboro Corp., the largest buyer of crude in the field.

The town-lot wells have ranged from 10 bbls. up to close to 600 bbls. in initial production, mostly after small shots of nitroglycerin. The 156 wells most recently completed in the Centralia field, inside and outside the city, have averaged 191 bbls per well in initial production, ranging from small wells up to one recently completed with a 700-bbl. initial output. This well was drilled in Clinton County, just west of the city. The town-lot wells have averaged as high, if not a little higher, than the wells outside the city.

The Benoist sand (Upper Mississippian) is found in the city at a depth around 1,350 feet, sometimes more, sometimes less, and varies in thickness say from 20 to 35 feet. The cost of drilling and completing a well and putting it on the pump varies from $8,500 to $10,000, depending upon whether the drill penetrates coal, or passes into an old worked-out mine. In the latter case considerable material, mechanical skill and time is required in getting safely through this "cave" and back into hard rock, bringing the cost up sometimes to the high figure named.

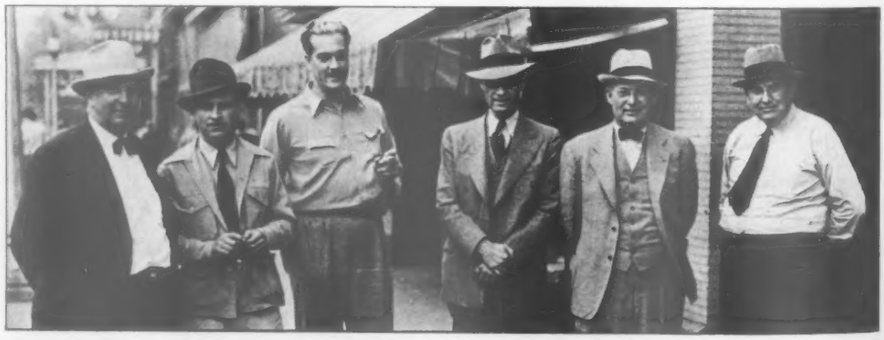
With the use of rotary tools, it takes from 48 to 96 hours to drill from spud to the top of the sand, but it requires about two weeks' time to complete a well and put it on the pump for its initial test. Where rotaries are used operators drill into the sand with cable tools, using various kinds of drilling outfits, portable and otherwise, for this part of the operation.

City Is Benefited

The development of the Centralia field has been a great benefit to the business life of the city, which had been hard hit by the depression. The mining of coal had been one of its chief industries, but the mines had been idle, or working one day a week, for a long time.

Deposits in Centralia banks since the field was discovered have increased 35 per cent, or by close to $1,000,000; hotels are filled with guests; retail trade has increased 20 per cent and a general air of prosperity pervades the place.

The Illinois Pipe Line Co. and the Owensboro Corp. have from the beginning served the Centralia



John Pugh, head of the Pugh Drilling Co., largest operator in the Centralia town-lot development, stands at the left of the picture. With him are Jake Haas, general superintendent for the Adams Oil & Gas Co.; Lou Eilersten of the Franklin Tool Co.; Kenneth Bolton of the Halliburton Oil Well Cementing Co.; H. C. Warters, district superintendent of the Illinois Pipe Line Co., and J. D. Reynolds, Arkansas and Centralia operator

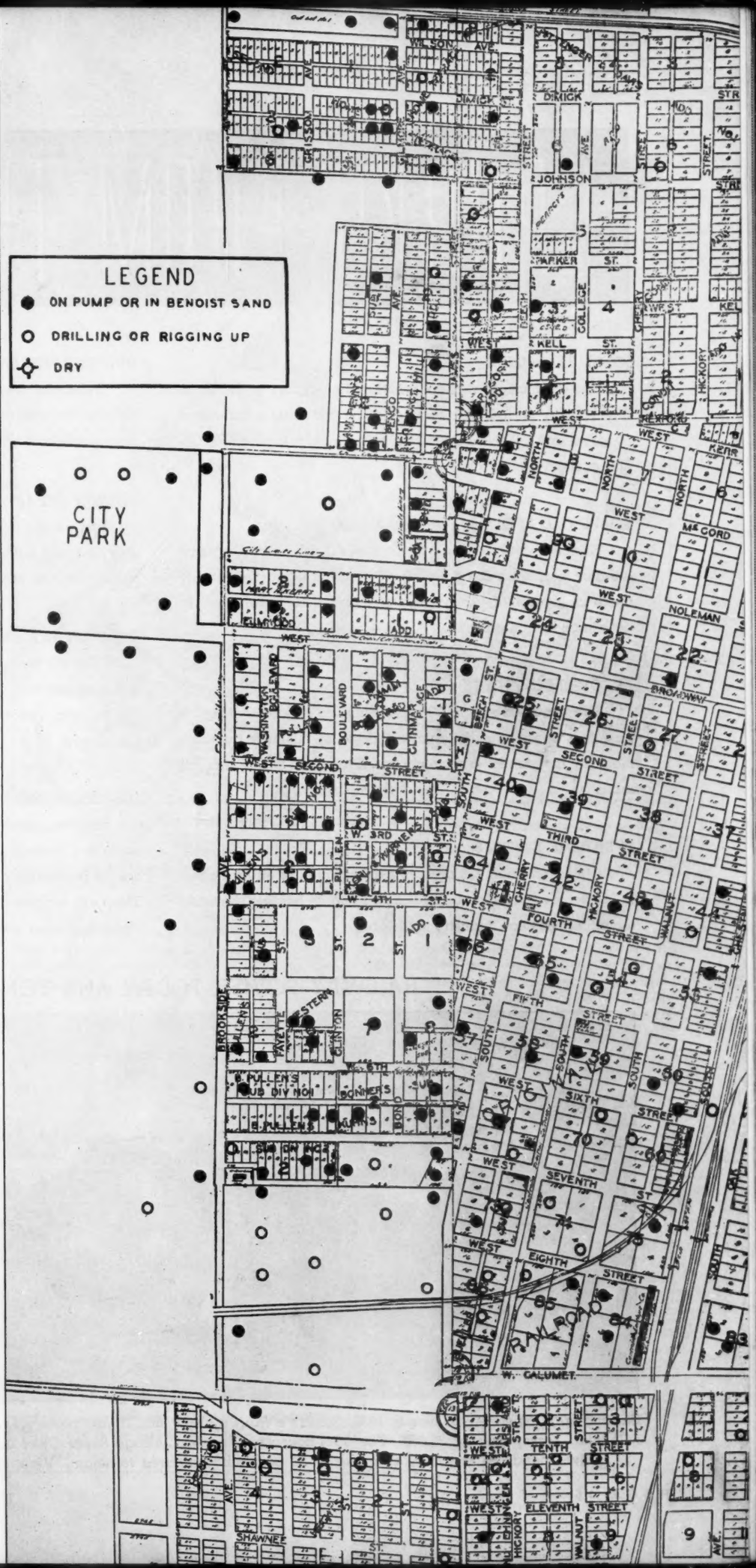
Campaign erations

field as purchasers of oil, but the latter company with a network of gathering lines became the major purchaser, also serving the Dix field in Jefferson County and the Beecher City field in Fayette County. Recently the Owensboro Corp. built a main 4-inch pipe line from the Dix field to Centralia, where it connects with a newly constructed 6-inch line from Centralia to Sandoval, Clinton County. There it connects with an Illinois Pipe Line Co. trunk line. The 6-inch line can handle 10,000 bbls. of oil per day with present pumping facilities, which will greatly benefit the producers in the Centralia field. The Owensboro Corp. recently found it necessary to curtail production to 20 bbls. per well, but later it raised the allowable, but cut the price 10 cents below the prevailing Illinois price of $1.35 per barrel. It is now running 40 bbls. per well from the field at the new price of $1.25 per barrel. Even this will require owners of the larger wells to sell only a part of their potential production.

Centralia was threatened with a "hot" oil menace recently, but it was stopped before it got under full momentum. One ambitious producer decided to go into the marketing business, and found a refiner willing to take Centralia oil at a price reported to have been $1.40 per barrel delivered at the plant in northern Illinois. As this price was only 5 cents above the posted price for crude at the well, it was up to the broker in Centralia to get his crude far below the market price if he was to make any profit after paying the tankcar freight charge to the refinery and his other costs. He is said to have contacted producers who could not get all their oil run by the two pipe line companies in the field and among them he found operators willing to sell their surplus oil all the way from 84 cents down to 70 cents per barrel.

Everything was running smoothly for the broker until his plans became known to anti-hot oil operators and the Centralia Chamber of Commerce, who figuratively bombarded the broker with arguments as to the dire results that would grow out of his plans. They succeeded in calling him off.

The town of Wamac, an incorporated suburb adjoining Centralia on the south, had an oil boom back in the twenties. In 1922 oil was discovered on a town lot, the production coming from a shallow formation which was named the Petro sand. The pool is practically exhausted, but as the Petro sand is present in the Centralia field the property owners in Wamac are preparing for another drilling campaign for deeper production. An ordinance was framed similar to that passed by the Centralia city council but after stormy meetings of the Wamac council it was amended recently to permit the drilling of four wells to a block which would mean about one well to every .875 of one acre. The only new well drilling in Wamac was a test of the Centralia Coal Co. on its own property. It is considerably removed from the nearest production in Centralia and in a sense is a wildcat. But one of the old Petro sand wells is being deepened and soon should show whether or not the Benoist sand underlies the town. If the Benoist is productive another town lot rush may be expected but on a smaller scale than in Centralia.



SPARKS FROM THE NEWS

$50,000,000 HOLIDAY

The oil business was the principal beneficiary of the three-day holiday period with sales of some 300,000,000 gallons of gasoline and 6,000,000 gallons of motor oils, bringing $50,000,000 exclusive of taxes.

SOLVE OLD PROBLEM

Hearings now under way in the F.T.C.'s action against a major marketing company may determine what place if any the reclamation of used motor oils and their resale has in petroleum merchandising.

RECOVERY EVIDENCE

The five-point rise in 30 representative oil stocks over the past two weeks is substantial evidence of business improvement to thousands of common-stock owners within the oil industry.

EVERYONE SUFFERS

After more than 100 days of expropriation of oil properties in Mexico everyone concerned appears to be holding the sack, including Mexican industry and labor.

HUNTERS RETURN

Operators who left the Seminole area several years ago hunting for greener pastures have returned and are finding new pools and shallow pays in old fields.

DIGNITY DEPARTS

Just as the city of Centralia, Ill., was settling down to a dignified and orderly prosperity, the town-lot and park drillers rushed in and started a boom.

TURN ON THE RADIO

"There's nothing wilder than a gasser out of control," says a Texas operator. He apparently has not listened to some of the political speeches now being made in that state and in Oklahoma.

DISAPPOINTMENT

Reports indicate that some jobbers who were ready for a summer "cleanup" through purchase of gasoline under the cost of production are not taking kindly to the recent advances. They are making their disappointment known to Washington, claiming unfair practices by refiners.

RAILWAY POWER TODAY AND TOMORROW

Starting with experimental unit in 1936, Santa Fe Railway now has 10 fast passenger and 11 switcher diesel-electric locomotives with total horsepower of 30,060. The 39¾-hour Los Angeles-Chicago Super Chief uses 88,000 gallons of 26-gravity diesel fuel in five roundtrips monthly, a saving of 50 per cent compared to steam. View shows diesel trains in Chicago yards

No Progress in Mexican Case

Standard Co. Says

After three and a half months of oil expropriation

Analyzing the expropriation of oil by Mexico, The Lamp, published by the Standard Oil Co. (New Jersey), will say in its forthcoming issue:

Three and a half months have slipped by since the seizure of properties of the Huasteca Petroleum Co. and 16 other oil concerns, with no solution in sight. During the interval events have made it possible to trace the evident purpose of the small radical group which has maneuvered Mexico into her present unhappy position. To recapitulate:

1. It was necessary for President Cardenas to allay public indignation over the high-handed manner of the confiscation. And so by press and radio the companies were denounced. The spectre of "foreign imperialism" was brought forth. A pocket revolution (financed, it was alleged, by the oil companies) was put down with much ostentation. This "revolution," it seems probable, was a clever political strategy to unify government support.

2. The people of Mexico had to be convinced that the United States backed the action of the Cardenas administration in its seizure. The protest note of the U. S. State Department was never published in Mexico. Instead, a single sentence conceding Mexico's "sovereign right to expropriate in the public interest"—a principle generally accepted in the abstract in international law—was lifted out of the text of the note and headlined as evidence that the United States approved the confiscation.

3. The moral integrity of Mexico had to be upheld in the eyes of the world. By the hasty action forced upon it, the government had been placed in an untenable position. Expropriation, to be legal, requires among other things, "immediate payment in cash of full, fair value for the properties as a going concern." Mexico admittedly had no resources or credit with which to make such payment, and so undertook an expropriation which she was not in a legal position to accomplish.

The illegality of the seizure was conveniently ignored. The attention of the world was diverted by staged demonstrations in which women gave up their jewelry and workers part of their wages, by numerous schemes for payment, not one of which mentioned cash —or, in fact, was ever formally submitted to the companies.

4. Realizing its inability to pay "full, fair value as a going concern" the Mexican government has gone about systematically to lay the foundation for reducing the value of the confiscated properties.

The first step was taken on May 10 when the supreme court arbitrarily reversed established legal practice, denied for the first time that petroleum existing in the subsoil is of private ownership, and concluded that all subsoil minerals are the property of the nation regardless of the fact that private owners may have acquired title prior to May, 1917, when the constitution was adopted. Thus, by a single stroke, a principle was set up which would enable the government to escape the obligation of paying anything at all for the most valuable element involved—namely, the oil in reserve underground.

Next, there was talk of "invested capital" which in the case of oil property, is no standard at all. A mining concern, to take an analogous case, may sink a fortune in endeavoring to locate a gold strike and miss the lode entirely. Another, investing an equal amount, may strike a rich vein. One is worth much more than the original investment, the other virtually nothing. On the books, the cost would be the same.

Finally, the government has encouraged all sorts of trumped up claims against the oil companies in a further effort to reduce the net amount of the valuation.

More far reaching in its significance than the properties that are at stake is the principle of private property rights and respect for international law which has been so openly jeopardized by the Mexican seizure.

At a time when the foundations of peace have been badly shaken by a growing disrespect for law and rights of others, society can ill afford to allow so flagrant a case to go unchallenged.

There are five billions in American money invested among our neighbors to the south. Latin America, rich in natural resources, needs foreign capital to develop them just as the United States did in the earlier years of its industrial growth. If a small radical group in Mexico can successfully

(Continued on Page 28)

COMPANY'S POSITION

The position of Standard Oil Co. (New Jersey) is this:

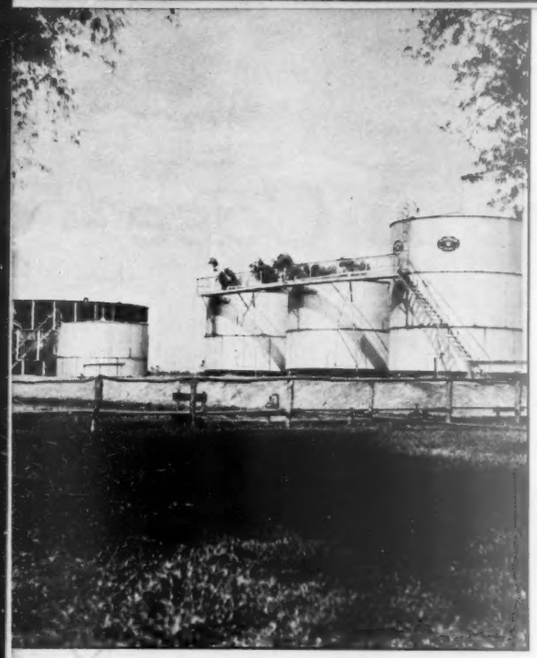
1. Its properties in Mexico were seized unreasonably and illegally in violation of Mexican law and the Mexican Constitution. This matter is now before the Supreme Court of Mexico.

2. No one questions the abstract right of a government to expropriate property within its borders, if this is done in accordance with the principles of international law and the statutes of its own country. International law requires in any expropriation immediate payment for the properties in cash for their full, fair value. The action of the Mexican government was therefore not expropriation but outright confiscation.

3. Measured either by the economic condition of the country or by past performances there is no reason to expect that Mexico will ever make adequate compensation for what it has taken.

4. Under the circumstances, for the company to discuss compensation at this time would not only be futile but would inferentially condone the confiscation, compromise its rights under international law and would prejudice its case before the Mexican courts to recover its properties.

The fallacy of attempting to make payment out of the proceeds of oil produced from the confiscated properties, as suggested in press interviews by certain Mexican officials, should be self-evident. It is equivalent to seizing a man's farm and offering to compensate him out of hay and grain stored in the barn by the rightful owner.



Tank battery installation in St. Martinsville field, St. Martin Parish, Louisiana

Coastal Louisiana Operate at Busy

By NEIL WILLIAMS

HOUSTON, Tex., July 4.—Drilling activity in Coastal Louisiana is showing no signs of abatement. Not only is consistent development being maintained in most of the older fields but an increasing volume of work is being undertaken in proving the newer areas. This is being augmented by a general spread of wildcatting not only to previously unexploited prospects but also to those which have been dormant for some time.

Active Operations

There are more than 153 active operations, and with important additional wildcat projects and development programs being planned the number is expected to be swelled substantially. The increase in activity has been especially noticeable within recent months. Since January 1, 43 rigs have been added. A year ago, 101 rigs were running, or 52 under the present total.

During the six-month period ended July 1, 242 tests were completed or abandoned. This exceeded by 18 the number for the last half of 1937. During the first six months of 1937, 239 tests were completed or abandoned.

Of the 202 tests completed, only 151 made oil wells. Four others were brought in as gassers but 87 were abandoned. The 214 tests completed during the last half of 1937 included 134 oil wells, 4 gassers and 76 dry holes. During the first half of 1937, 140 of the 239 tests completed were oil wells, 6 gassers and 93 dry holes.

More Producers

Total number of producing wells in the district had been boosted to 1,158 on July 1, which is 96 more than on January 1, and 209 more than on the same date a year ago. The list includes only those wells actually on production that day and excludes a list of wells capable of production but which were shut in for various reasons.

Daily average production also has been continuing its steady upward trend, reaching a new peak of 189,854 bbls. for the week ended June 25. This was an increase of approximately 19,000 bbls. over the production of January 1, and nearly 22,000 bbls. above that of a year ago. Although half of this increase can be attributed to the Jennings and Lafitte fields, where important additions to daily production have been made, the remainder is due to consistent gains in development generally.

Nine new fields have been opened so far this year. These compare with the nine new fields brought in during the preceding six-month period, and five during the first half of 1937. Definite indication of another field for this year is given in the very recent gas blowout in a well drilled by Texas Co. on the Vermilion Bay salt dome, in Vermilion Bay, Iberia Parish.

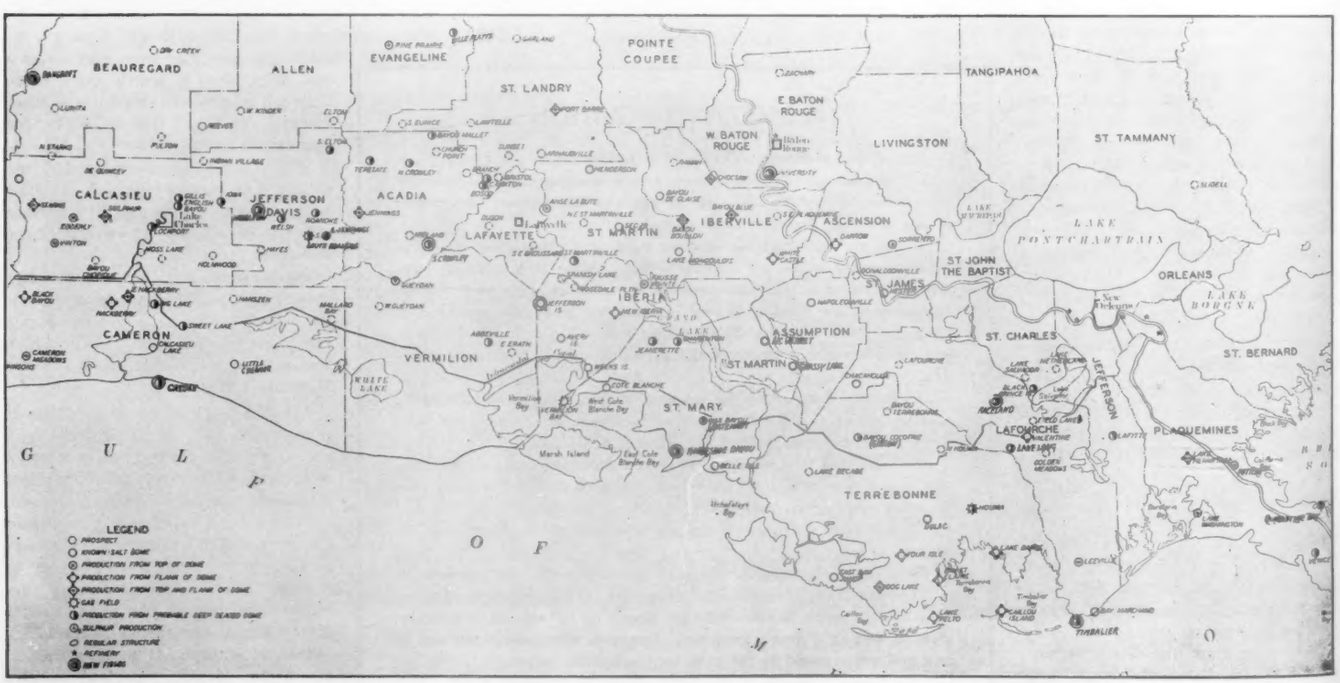
The two most recent new fields opened were the DeLarge field, Terrebonne Parish, by Fohs Oil Co. No. 1 Buckley-Bourg and that opened by Texas Co. on the Jefferson Island salt dome, Iberia Parish.

The discovery well of the DeLarge field, completed June 18, is the deepest oil producer in the world, with production from a total depth of 13,266 feet. The well was shut in shortly after completion when connections froze. Jefferson Island is one of the "Five Islands," a group comprising some of the oldest known salt domes on the Gulf Coast but on which no commercial production has ever been found.

New Fields

Other new fields opened this year include Timbalier Bay and Raceland, Lafourche Parish; Creole, in the Gulf of Mexico off the coast of Cameron Parish; University (South Baton Rouge), East Baton Rouge Parish; Woodlawn, Jefferson Davis Parish; Bancroft, Beauregard Parish, and South Crowley, Acadia Parish. The latter two have been opened within a month, and their discovery wells, which are high-pressure distillate producers, are shut in. Of the others, Creole, Raceland and Timbalier Bay appear to be the most important, although, due to limited development, little is known of the extent of any of them.

Addition of these fields boosts the total number of fields to 69, including only those actually



Operations in the Coastal Louisiana fields

Drillers Rate

Fohs Oil Co. No. 1 State, deep wildcat test in Bay Baptiste area, Terrebonne Parish

producing. Supplementing these are a number of areas which have been productive but at present are inactive. Five years ago there were fewer than half that number of fields, the greatest development having taken place within the past couple of years.

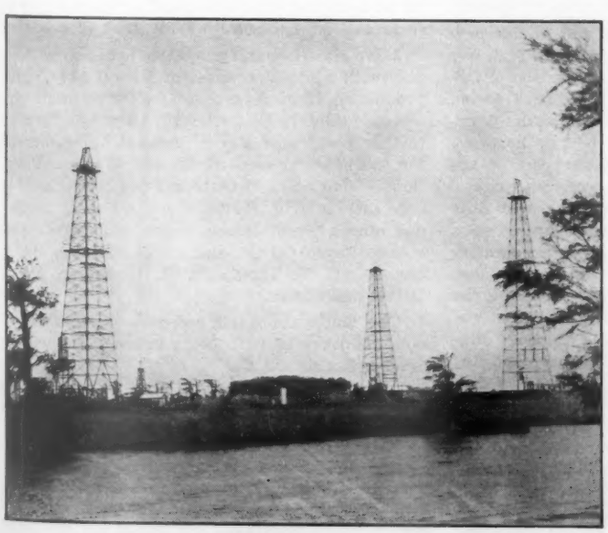
Of particular significance in connection with the present activity in Coastal Louisiana is the fact that the drilling is distributed over the entire district. Except for the Jennings field, where 17 rigs are running; West Hackberry, having seven rigs; New Iberia, eight; Ville Platte, six, and Port Barre, five, there are no large concentrations of drilling.

Four fields have three rigs each, but in the remainder only one or two rigs each are running, these being kept busy in steady, consistent development. Forty-seven fields of the 69, exclusive of unproductive salt domes and prospects where similar work is being carried on, are included in the drilling. Considering this, the present activity is due not to any particular local drilling flurry or boom but to a general spread of development.

Of the total operations, 207 are associated with productive areas, leaving 35 on scattered unproductive prospects or salt domes. Many of the fields having had only a limited development, in some instances only the discovery well, a large number of the operations classed as field drilling in actuality are wildcats, or semiwildcats. Only a comparatively small amount of the drilling activity represents "inside" or proved development. Thus practically all work going on in Coastal Louisiana is in new or extension territory in exploration of additional, or unproved, reserves.

Among the unproductive areas being drilled, six are in Terrebonne Parish, the most active parish in wildcatting. In total number of operations, including development of fields and wildcats, this parish is third with 17 rigs running. It is exceeded only by Acadia Parish with 20 rigs (17 in Jennings field) and Cameron Parish with 18 rigs, 9 of seven producing fields in the parish with several which are in the Hackberry district. There are other proved salt domes. Development of these, together with several other fields and prospects immediately adjacent, has made Houma, the operating center, one of the most active cities in Coastal Louisiana within recent years. Practically all these fields are in open water or marsh areas, necessitating "maritime" development.

The completion rate in comparison to the number of rigs running is being slowed by the greater depths to which exploration and development are being carried. Production is being established at depths below 8,000 and 9,000 feet in an increasing number of fields, which is lengthening the time for reaching productive horizons. At this time there are now more than 20 tests drilling below 9,000 feet. Six are below 10,000 feet.



Portion of Jeanerette field, St. Mary Parish

Continuation of active development in Coastal Louisiana is attributed largely to the liberality displayed by the state in allocation of allowable production. With relatively high allowables for new and developing fields, incentive is given for exploration of additional reserves.

But in many of the fields of Coastal Louisiana, particularly those in the isolated marsh or water areas, some of the benefits to individual operators of high per well allowables are partially offset by the comparatively high exploration and development costs. In some places the cost would be prohibitive.

ACTIVE DRILLING RIGS ON LOUISIANA GULF COAST*

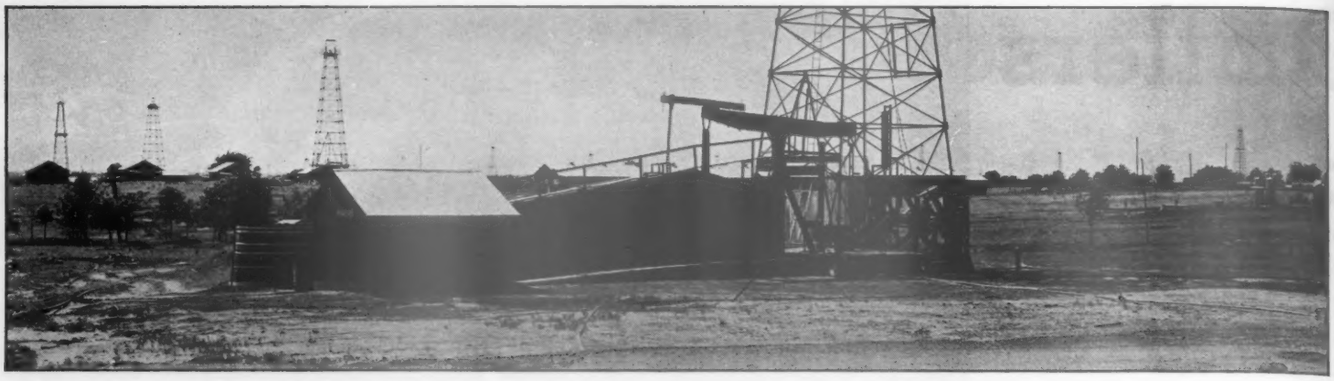
Field and parish —	Active rigs July 1, 1938	Jan. 1, 1938†	July 1 1937†
Abbeville, Vermilion	2	0	1
Anse La Butte, St. Martin	2	2	0
Bateman Lake, St. Mary	1	0	1
Bay St. Elaine, Terrebonne	1	2	2
Bayou Blue, Iberville	1	1	0
Bayou Des Allemands, St. Charles	3	1	1
Black Bayou, Cameron	0	1	1
Bosco, Acadia-St. Landry	0	1	0
Cameron Meadows, Cameron	4	0	0
Caillou Island, Terrebonne	1	1	1
Cheneyville, Rapides	2	1	0
Charenton, St. Mary	2	4	2
Choctaw, Iberville	1	2	0
Creole, Cameron	2	1	1
Darrow, Ascension	‡3	2	2
Dog Lake, Terrebonne	1	1	1
Four Isle, Terrebonne	1	1	1
Edgerly, Calcasieu	0	1	0
Gibson, Terrebonne	2	1	2
Fausse Point, Iberia	1	1	1
Garden Island Bay, Plaquemines	1	1	1
Gillis, Calcasieu	0	2	6
Hackberry (East)¶, Cameron	(§)	(§)	(§)
Hackberry (Old)¶, Cameron	9	9	8
Horseshoe Bayou, St. Mary	1	1	1
Iowa, Calcasieu-Jeff Davis	0	1	1
Jeanerette, St. Mary	1	1	3
Jefferson Island, Iberia	1	0	1
Jennings, Acadia	17	13	10
Lafitte, Jefferson	3	3	3
Lake Barre, Terrebonne	2	0	0
Lake Hermitage, Plaquemines	0	1	1
Lake Long, Lafourche	1	1	1
Lake Pelto, Terrebonne	1	0	0
Leeville, Lafourche	2	1	2
Lirette, Terrebonne	2	1	0
Lockport, Calcasieu	1	1	1
New Iberia, Iberia	8	4	7
North Crowley, Acadia	2	2	1
Port Barre, St. Landry	5	0	1
Potash, Plaquemines	1	0	0
Quarantine Bay, Plaquemines	2	1	1
Raceland, Lafourche	3	1	0
Roanoke, Jefferson Davis	0	1	1
Sorrento, Ascension	2	1	1
South Roanoke, Jefferson Davis	2	0	1
South Elton, Jefferson Davis	1	1	1
South Jennings, Jefferson Davis	0	0	1
Starks, Calcasieu	2	3	1
St. Martinsville, St. Martin	0	0	1
Sulphur, Calcasieu	2	3	0
Tepetate, Acadia	0	1	2
Timbalier Bay, Lafourche	1	1	1
University, East Baton Rouge	2	0	0
Valentine, Lafourche	2	2	3
Venice, Plaquemines	1	1	1
Villa Platte, Evangeline	6	1	0
Vinton, Calcasieu	0	5	0
Welsh, Jefferson Davis	3	2	0
White Castle, Iberville	0	2	1
Woodlawn, Jefferson Davis	1	1	0
Miscellaneous	35	17	21
Total	153	110	101

*Does not include workover operations. †Operations in some fields were wildcats at time drilled. ‡Two rigs standing. §Included in Old Hackberry. ¶East Hackberry and Old Hackberry operations combined.

LOUISIANA GULF COAST SUMMARY

	June 1, 1938	Jan. 1, 1938	June 1, 1937
Number drilling wells	145	110	101
Number producing wells	1,136	1,062	949
Daily production*, (bbls.)	181,275	170,294	167,542

*Based on daily average production for respective weeks.



St. Louis field, Pottawatomie County, again one of the busiest sectors in Oklahoma oil fields

Finding New Pays and Pools in Seminole and Pottawatomie

By DAL DALRYMPLE

Prospectors of '49, rushing to California in their mad quest for gold, passed over rich deposits of the precious metal. Later, they returned to Carson City, Tonopah, Cripple Creek and other Nevada and Colorado fields to reap great harvests in gold.

A corollary is found in the present development in the old Seminole and Pottawatomie County oil fields of Oklahoma. In the heyday of the Greater Seminole boom oil operators, in their hurry to find Wilcox sand production, overlooked or ignored rich pay sands found at shallower levels. Today, some 10 years later, they are going back into those old fields and finding profitable oil production above the Wilcox horizon. Not only are they uncovering new pay zones in the old pools, but they actually are opening new pools, with both Wilcox and shallow production. in areas that previously were neglected.

The Traugh pool, in the Konawa district of Seminole County, is a good example. There, almost within the shadow of the derricks of some of the older pools, new Wilcox and Senora sand production has been found. Some wells that would have been considered big producers when the Seminole boom was at its height have been completed in this pool in the past year or so.

Dora Area

The Dora area is another new pool in this old district that has attracted attention. Located north of the Konawa field and southwest of Little River, Dora has been one of the more active sectors of Oklahoma in recent months. Production largely is from the shallow Earlsboro and Thurman sands, and, while many of the producers have been comparatively small, wells of 1,000 bbls. or more daily initial yield have not been uncommon.

These are cited as two of the outstanding pools that have been opened in the new Seminole play. There have been others with limits and potentialities yet to be determined.

In the early days of the Seminole field wells were drilled with rotary, operators going almost exclusively after the big Wilcox pay, passing up all sands above. They usually rotated to around the 3,800-foot level, then rigged up cable tools and took samples from that depth downward. Few of the drillers were formation men, knew little or nothing of the possibilities of the shallower pays, perhaps cared less. Consequently, very few samples were taken above 3,000 feet and little definite information regarding the shallower horizons was obtained until recently.

Upper Production

It is different, now. Today's operators are looking for and finding oil in the upper pay zones. They usually drill to the top of whatever sand is the pay formation in the respective pool, set pipe on top of the sand and core ahead. Cementing jobs are such that operators now are able to take advantage of production wherever it is found.

Identification of the sands found in this new play is not entirely accurate. The several pay zones are designated variously as Earlsboro, Calvin, Thurman, Boggy, Senora, Gilcrease, Trenton, Viola, etc., not named in order of depth. Whatever the true identification of the pay horizons, the several sands are in the lower part of the Pennsylvanian series in the respective areas.

This largely is an independent play, with only a few of the big companies participating on a more or less modest scale. Independent operators of Shawnee, Seminole, Ada, Okmulgee, Tulsa, Oklahoma City and local centers are setting the pace in this new activity that has revived the Greater Seminole, St. Louis and adjacent districts. Some independent operators, confident that profitable production could be found at shallow depths, studied such logs of old wells as were available, took up old leases that had been released, obtained new leases on areas that had not been drilled, and started work. They found oil, opened Traugh, Dora and other new pools and the new Seminole development was under way—if not a boom, at least the most active development program in Oklahoma today.

The North Bethel pool was opened late in 1936 by Amerada Petroleum Corp., and in a short time several large producers were completed in that sector. This discovery proved new and profitable production was yet to be found in the Seminole district. So the wildcatters returned to the scene of their great strikes of the past, and began looking around again. This resulted in the discovery of five new pools in 1937 and several more thus far in 1938, and the uncovering of several new pay horizons in old fields.

The Traugh pool was opened at Paul Traugh No. 1 Williams, NE SE NE section 22-6-6, which was a 62-bbl. well at 2,361 feet. That was in February, 1937. Some months later, W. B. Pine opened a Wilcox sand area at No. 1 Amoson, SE SE SW section 15-6-6, north of the Traugh discovery. It had second Wilcox sand at 3,763 feet, total depth 3,782 feet, and flowed as high as 1,967 bbls. of oil in 24 hours. The two areas were combined to form the Traugh pool.

Dave Malernee and associates opened the Dora pool with a small producer in section 29-7-6, with production from Senora sand at 2,950 feet. Numerous wells, large and small, have been drilled in this pool, with larger production ranging to the southeast in sections 32- and 33-7-6, and sections 4- and 5-6-6. Other operators active in this area include J. F. Smith, W. A. Villines, Deaner and others, Troup-Moore, Texas Co., Beaver and others, Rayco Oil Co. and others, Francis Oil & Gas Co., C. V. Thompson, H. L. Foster, C. R. Morris and others.

The South Cromwell pool was another Seminole discovery of 1937, being opened in April by Sinclair-Prairie Oil Co.

Other New Strikes

Recent discoveries include the Hazel pool in section 26-7-5; the Tyrola pool in section 4-5-6, and the Swan pool in section 18-6-6—all areas officially named by the Mid-Continent oil field nomenclature committee.

New production found in sections 22-, 27- and

28-8-7, Seminole County, is included in the Jackson pool.

The East Beebe pool was opened just south of the Canadian River in Pontotoc County in section 21-5-5.

The Swan pool was opened a few weeks ago at W. A. Delaney and others No. 1 Swan, SE SW SW section 18-6-6, west of the Konawa pool in Seminole County. It flowed as much as 280 bbls. of oil in 19 hours by heads and after a shot was completed for 80 bbls. daily, from Thurman sand at 2,671-91 feet.

Other recent wildcat discoveries near the Seminole-Pottawatomie County line included three wells that were listed as completions early in June. They are:

W. A. Villines and others No. 1 Reed, NE cor. section 35-7-5, south of Hazel and between the Dora and St. Louis pools. It found Boggy sand at 2,983 feet, total depth 3,005 feet, and was completed for 85 bbls. of oil daily.

Grisso Royalty Co. No. 1 Johnson, NE SW SW section 27-6-5, southwest of the Grayson pool, flowed 242 bbls. of oil by heads and through choke in 24 hours from Boggy sand at 2,697-2,714 feet.

Greer and others No. 1 Coker, NW NE NE section 25-7-5, northeast of the Villines strike and on the eastern edge of the St. Louis district, was a small producer from sand topped at 2,997 feet.

The old St. Louis district of Pottawatomie County has shared largely in the new development, with several extensions of old areas, discovery of new pay sands and opening of new producing areas in the general area being recorded. A recent tabulation showed 22 drilling operations in the St. Louis district, making it one of the more active areas of Oklahoma. Earlsboro sand production has been uncovered in the west part of Township 7-4, in the vicinity of Pearson. New Simpson production has been found in the Watchorn sector in sections 32- and 33-7-5. Calvin sand producers are being completed in sections 13-, 14-, 15-, 21-, 22- and 23-7-4, with the probability this work will spread, although the Calvin pay is erratic. Some of the more active operators in the St. Louis district include Ross Oil Co., J. F. Smith, Trigg Drilling Co., Magnolia Petroleum Co., Alma Oil & Gas Co., Phillips Petroleum Co., Atlantic Refining Co., Mudge Oil Co., Gulf Oil Corp., Dixie Oil & Gas Co., Producers, Inc., Denver Producing & Refining Co. and others. Operators say the new development at St. Louis will continue for a considerable time. Testing of shallow sands overlooked during boom days and development of new areas already discovered or yet to be found will keep them busy for a goodly period.

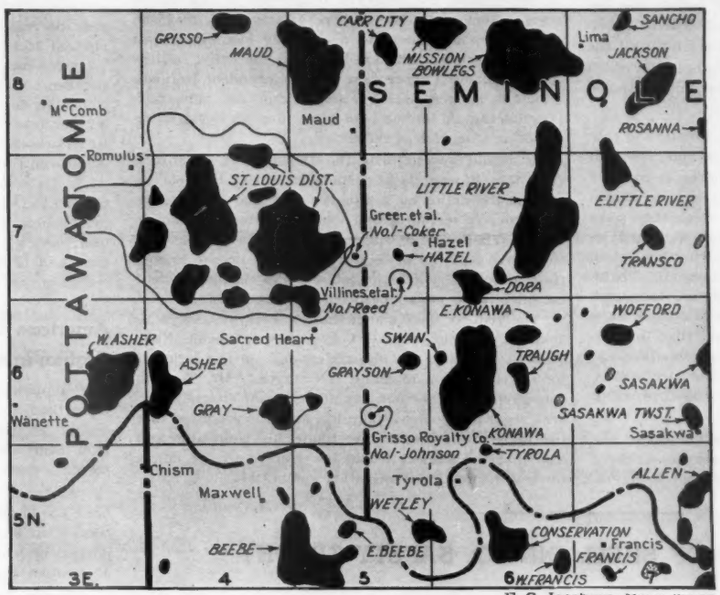
Beebe Area Active

The Beebe district in northern Pontotoc County has shared in the new activity, with several new tests already completed or drilling in the older Beebe pool as well as in the East Beebe sector. Trenton production has been uncovered in section 25-5-4, in the lower part of Viola lime. This production has not been defined and many locations remain to be drilled. Lake Oil Co. is the most active operator in this sector.

The old Allen area, spreading over adjacent portions of Seminole, Pontotoc and Hughes counties, also has benefitted from the revival of field work. Outstanding in this sector is Gilcrease production being found at the tip end of a big Viola high in section 25-5-7, near the Canadian River.

More New Work

Considerable work over a long period seems assured for Greater Seminole and adjacent areas. Most of the new pools already discovered remain to be defined, and are due for additional work. Several wildcats now drilling or proposed may open new areas. The area between Dora, Hazel Villines and the east edge of St. Louis undoubtedly will be given a thorough testing, operators say. It is possible the whole intervening region may be proven for production from one pay horizon or another, though the sands may be erratic and numerous dry holes result.



E. C. Jacobson, Maps, Tulsa

This sector of the Greater Seminole and St. Louis districts, which had its greatest development 10 to 12 years ago, again is the busiest field in Oklahoma. Three of the newest discoveries designated by the circles.

A recent tabulation in the Seminole-Pontotoc-Pottawatomie area under discussion, exclusive of St. Louis, showed the following operations:

Lake Oil Co. No. 4 Gray B, NW NE SW section 25-5-4; same operator's No. 5 Bray B, SE SE SW section 25-5-4; United Corp. of Massachusetts No. 3 Burke B, SW SE section 25-5-4; Farmers Mutual Royalty No. 1 Waite, NE NW section 9-5-5, wildcat; same operator's No. 1 School Land, SE NW section 16-5-5, wildcat; Delaney No. 2 Starrett, NW SE NE section 21-5-5; Sinclair-Prairie Oil Co. No. 2-B Starrett, SE NW NE section 21-5-5; Vierson Oil & Gas Co. No. 1 Hatcher, SW NW NW section 22-5-5; J. L. Cowley No. 1 Malloy, SW NE SW section 30-5-5.

Operations in 6-5

Denver Producing & Refining Co. No. 1 Zoeller, NW SE SE section 5-6-5; Troup & Moore No. 1 Saunders, NW SE SW section 27-6-5; C. E. Davis No. 1 Slaughter, NE NW SW section 34-6-5; Texas Co. No. 1 Westbrook, SW SE NW section 34-6-5; Bryan Petroleum Co. No. 1 Ward, SW NW NW section 3-6-6; Winkler & McQueen No. 7 Bruner C, NW SE NE section 4-6-6; Denver Producing & Refining Co. No. 1 Mathis, SW NW SW section 7-6-6, wildcat northwest of the Grayson pool, estimated good for 125 bbls. of oil daily from Simpson dolomite topped at 3,760 feet; W. B. Pine No. 1 Scharber, NE SW SW section 15-6-6; Delaney No. 2 Swan, SW cor. section 18-6-6; Sun Oil Co. No. 1 Swan, SW SE SW section 18-6-6.

Minnehoma Oil & Gas Co. No. 1 Alexander, NE NW NW section 19-6-6; Atlantic Refining Co. No. 4 Damron, SW NE NW section 22-6-6; W. B. Pine No. 7 Williams, SW NW NE section 22-6-6; Sinclair-Prairie Oil Co. No. 2 Tennison, NE SE NW section 22-6-6; W. B. Pine No. 13 Cheparney, NW SE SW section 12-5-7; Grisso No. 1-A Sanders, SE NW SW section 27-6-5; Sinclair-Prairie Oil Co. No. 3 Tennison, NE SE NW section 22-6-6; Rogers & Rogers No. 1 Stockton, SE SW SW section 25-7-5; Alma Oil & Gas Co. No. 1-A Bourbonais, SW SW NE section 33-7-5; same company's No. 2 Curry, SE SW NW section 33-7-5, and J. F. Smith and others No. 1 Hall, SW SW NE section 30-7-6.

Several additional tests have been started since that tabulation was made, and some of those listed have been completed—but the list, combined with the 20-odd operations at St. Louis, shows that the distinction of being Oklahoma's busiest field has returned to the Greater Seminole area.

One of the Pottawatomie County outposts was recorded as a failure the past week. This was the J. F. Smith No. 1 Henderson, NW NW NE section 4-5-3e, wildcat southwest of the West Asher pool. It found dolomite at 4,320 feet, Wilcox sand 4,249 feet, had a hole full of water and was abandoned at 4,263 feet, total depth.

A new Pottawatomie County wildcat, Atlantic Refining Co. No. 1 McMurry, NW NE SW section 6-6-4, on the southwest edge of the St. Louis district, had set surface casing and was drilling ahead.

Immediate development of the West Konawa pool, in Seminole County, recently opened by Grisso Royalty Co. at No. 1 Johnson, section 27-6-5, appeared imminent. A 10-acre spacing order for the area has been issued by the corporation commission. Original production in the area was from Boggy sand, but a shallower pay recently was uncovered at around 2,325 feet.

New Jersey Co. to Spend $175,000,000 This Year

Capital expenditures of about $175,000,000 are contemplated for 1938, the Standard Oil Co. of New Jersey said in an amendment to its registration statement under the Securities Act of 1933 covering a combined issue of debentures and serial notes aggregating $85,000,000.

The company said that while no specific allocation of the net proceeds had been made or could be made at this time, they would be placed in the company's general funds and used in making available to subsidiaries additional funds needed for capital expenditures and for financing inventories and receivables and for such other purposes as the directors may determine to be in the interest of the company.

"The program now under study," the company added, "contemplates capital expenditures of approximately $175,000,000 in 1938, of which approximately $39,000,000 had been spent to March 31. This program included approximately $90,000,000 for acquiring and developing crude reserves, $38,000,000 for improving and extending refining capacity, $15,000,000 for tankers, $24,000,000 for marketing facilities, and $8,000,000 for miscellaneous purposes. The company may materially change, enlarge or diminish the program or any part thereof, depending upon developments in its business, which are unpredictable."

The amended prospectus was dated July 7, indicating this probably will be the date of the offering, which includes $50,000,000 of 2¾ per cent 15-year debentures and $35,000,000 of serial notes.

No Madison Case Postponement; Jury Routine May Delay It

MADISON, Wis., July 5.—U. S. District Attorney John Boyle says there will be no postponement of the grand jury session scheduled to start July 12 at which complaints against oil companies laid before the Department of Justice are to be presented. The oil investigation is unscheduled but will not start until all the other business of the grand jury is completed, which Mr. Boyle said, probably caused rumors of postponement.

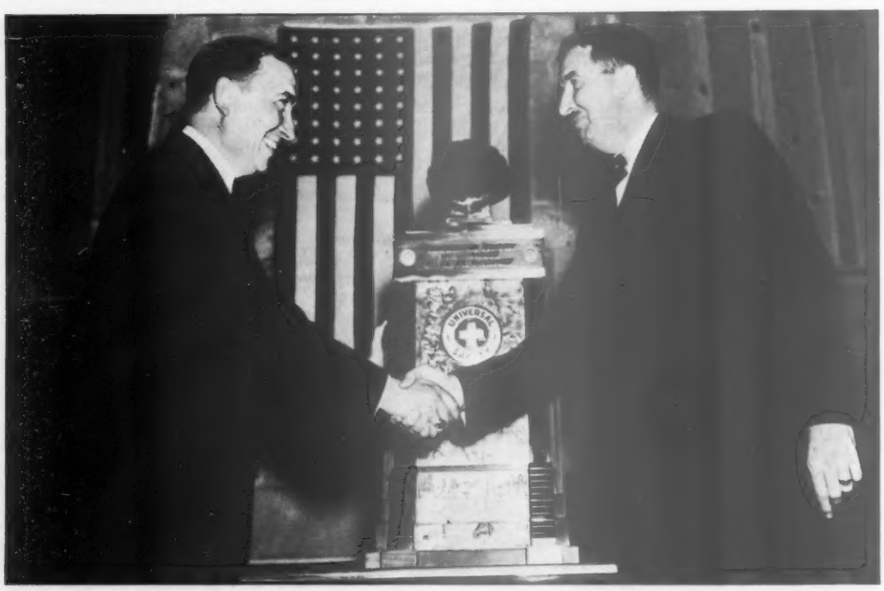
While department officials refuse to discuss the case prior to the grand jury meeting, it is understood in Washington that the government believes it has evidence the two Madison oil cases already concluded have not ended the practices against which they were directed. One group of companies was convicted on charges of cooperating in a gasoline buying pool plan, and another group entered pleas of nolo contendere to charges of fixing uniform jobbers' margins. Independent jobbers, however, contend these legal actions have not helped their economic situation and that through one device or another the majors are contriving to keep up the price of gasoline at independent refineries, to keep down jobbers' margins, and in other ways to oppress independent distributors.

While the gasoline buying pool, the subject of the first Madison case, may have been discontinued, there are contentions that its objectives are still being attained through other methods. There is also the suggestion that the major companies which plead nolo and paid fines in the second case have made no move to discontinue the practices mentioned in the indictment. Some of the jobbers' complaints reaching Washington also mention a more or less mysterious newly formed organization known as the Ethyl Dealers Association for Cooperation with Independent Refiners which is alleged to be accomplishing the same purposes as the old buying pool in keeping up the gasoline prices at independent refineries.

It would appear that the Department of Justice feels that it won its two Madison battles but lost its war on the major oil companies, and that its victories were merely technical and without material economic result. There is the suggestion that the majors feel they have paid the price and obtained a license to continue practices which the jobbers and the department consider to be violations of the antitrust laws.

The visit to the department last week by George M. Tunison, attorney for L. L. Coryell & Son, Lincoln, Neb., jobbers, is said to be only one example of the series of jobber complaints reaching Washington. Mr. Tunison conferred with Thurman Arnold, assistant attorney general, regarding jobbers' margins, and was promised that the department would investigate his complaint and also that the subject would be referred to the newly formed monopoly investigating committee.

PRESENTATION OF SHELL OIL CO. SAFETY TROPHY



S. Belither (right), president, presents the President's Trophy to G. H. van Senden, vice president in charge of manufacturing

LOS ANGELES, Calif. — Climaxing the first six months of a continuous safety promotion program, high executives of Shell Oil Co. gathered at Martinez refinery recently to make the first award of the President's Trophy to the manufacturing department, which led the entire Shell organization in the work of preventing industrial accidents. The production department ranked second and the marketing department third. Los Angeles Basin captured the production department trophy, and the Hawaiian division rated best for the marketing department trophy. All trophies will be held six months, carrying on a continuous competition between departments and units within each department.

S. Belither, president of Shell Oil Co., headed the executives attending the Martinez ceremony. Others present included G. H. van Senden, vice president in charge of manufacturing; L. E. David, operations manager under whose supervision the safety work is being carried on; Charles S. Jobe, personnel manager; F. S. Clulow, manager of the manufacturing department; A. H. Calderwood, manager of Martinez refinery; I. M. Hemphill, manager of Wilmington refinery, and C. J. Nobmann, safety engineer.

"Twenty-five years ago the oil industry was very dangerous," Mr. Belither said in presenting the trophy. "It was decided such a state of affairs could not continue and the industry started work on a large scale to reduce the hazards. In this work, Shell has always been a leader. No expense has been spared to give employes the safest possible conditions. We employes, on the other hand, have not done so well. Of all accidents today, 80 per cent are due to human carelessness and mistakes and only 20 per cent to mechanical and other causes."

Independent Filling Station Sales Reported by States

Department of Commerce figures on retail sales by independent stores for April include data on filling stations. Twenty-three in Colorado reported 14.3 per cent decrease compared to April, 1937; 18 in Illinois showed 16.4 per cent increase; 14 in Iowa registered 7.6 per cent decline; 35 in Missouri had a gain of 1.2 per cent; 17 in St. Louis gaining 6.8 per cent; 12 in Nebraska decreased 12 per cent; 49 in Texas were off 3.7 per cent; 14 in Wisconsin gained 5.8 per cent; 17 in Arkansas lost 8.2 per cent; 34 in Ohio were down .8 per cent; 64 in California showed 2.5 per cent gain, while 11 in Los Angeles were off 5.5 per cent; 37 in the Rocky Mountain states declined 11.3 per cent; 22 in Washington state lost 7.5 per cent; 22 in Oregon decreased 4.1 per cent; 10 in Georgia declined .7 per cent, and 12 in Indiana showed 19.7 per cent increase.

American Companies Surrender Afghan-Iran Concessions

Companies in which Seaboard Oil Co. has slightly more than a 50 per cent interest have decided to surrender the concessions obtained in Afghanistan and Iran. Seaboard Oil Co. has issued the following statement:

"Early in 1937 an oil concession was granted Inland Exploration Co. covering Afghanistan; a similar concession was granted Amiranian Oil Co. covering a portion of Iran; and a pipe line concession was granted Iranian Pipe Line Co. for the latter country.

"During the past year, geologic field parties have been studying these areas and excellent oil possibilities have been indicated. However, because of world economic conditions and particularly those prevailing in the oil industry as related to supplies of petroleum readily available to world markets, the companies have decided to discontinue the work and to surrender the concessions.

"In announcing the termination of this work and the surrender of the concessions, officials paid particular tribute to the courtesy and splendid cooperation extended the companies by the governments of Iran and Afghanistan. Notice of surrender has been given the governments in accordance with the terms of the respective concessions."

Since expenses in connection with any work involved in these countries has been met out of current earnings, the company has not capitalized these concessions and has written them off entirely.

Largest Welded, Turbo-Electrically Driven Tankers in World

The American merchant marine will boast the two largest welded, turbo-electrically driven ships in the world with the launching of Atlantic Refining Co.'s 18,500-ton tanker, "Robert H. Colley," sister ship to the "J. W. Van Dyke." The new vessel, named for the company's president, will slide down the ways at Sun Shipbuilding Co. yard, Chester, Pa., on July 9, and will be christened by Mrs. Colley.

With an overall length of 541 feet and 5 inches it has a capacity of 156,000 bbls. (6,552,000 gallons) of gasoline—enough to supply gasoline for a community of 39,000 a year.

Lion Oil Refining Purchases Penn Tenn Oil Properties

Lion Oil Refining Co. has purchased the marketing properties of Penn Tenn Oil Co., effective July 1. Included are bulk plants at Jackson, Milan, Huntingdon, and Lexington, Tenn., and all of the company-owned marketing properties and controlled outlets of Penn Tenn company. Properties involved, approximately 100 outlets, are in western Tennessee.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Why the Secrecy?

The Department of Justice for reasons known so far only to the department has instituted another grand jury investigation of the oil business at its investigating center in Madison, Wisconsin.

It has been indicated by those close to the department that this investigation is due in part to complaints by certain jobbing interests that the recent improvement in spot gasoline prices was caused by monopolistic action on the part of companies which has resulted in reduced operating margins for the jobbers.

Other jobbers are claiming they should have wider guaranteed margins in contracts with suppliers and insist there is something illegal going on when they fail to get them.

In the first place, the question arises why an investigation of this character should be carried on behind the closed doors of a grand jury room.

There is no mystery regarding the matters of which complaint has been made at Washington. The government's own records of the past 15 years have thousands of pages of reports pertinent to these developments.

When fundamental conditions in the industry change there are changes in prices, up and down.

So far as recent price changes are concerned they are an open book. Spot gasoline quotations in the Mid-Continent and Middle West have advanced fractionally in recent weeks due to an improvement in the industry's statistical situation following a period of months in which every gasoline sale represented a loss to the average refiner.

Certainly, no one in the oil business has ever tried to hide these facts. This being so, why should not any investigation of the developments in this business be conducted in an open hearing?

Is not the proper place for such an investigation before the joint committee on monopoly which has just begun its inquiry which promises to be the most complete and unbiased investigation ever attempted?

The oil business will welcome such an investigation provided it is conducted on a fair and open basis at which every branch of the business, as well as the consumers, has an opportunity to be heard.

It is no exaggeration to say that the industry as a whole will enter such an investigation open-mindedly and would cooperate to the fullest extent. Many in the industry favor certain changes.

If the government is going to rush into an investigation every time there is a complaint from small minority groups of jobbers it will first have to decide just what the margins should be in the wholesaling and retailing of gasoline and other petroleum products. It also will have to determine whether jobbing is to be exempt from the usual ups and downs of other branches of the oil industry and all business or whether it is to be assured profits regardless of what happens.

The matter of too many stations, lack of uniformity in operating costs and the rights of consumers in regard to service enter this complicated marketing picture.

Then there is the position of the independent refiner who made it possible for the independent jobber to be a factor in marketing. His road has been rough in recent years. He has a story to tell before anyone attempts to establish a yardstick for the industry's operations.

The jobber is entitled to a fair margin of profit. He is not entitled to a price relationship which means, in effect, that every dollar he makes is a loss to the refiner who supplies him.

In such an investigation what necessity is there for a grand jury, which practically hears only one side with all present sworn to secrecy?

STATE CAPITALS

OKLAHOMA

THE INCREASE IN THE ALLOWABLE production of crude oil in Oklahoma in July to 518,000 bbls. per day was based in part on an expected increase in demand for Oklahoma oil.

The commission granted an allowable of 270,298 bbls. to the prorated pools of the state and 157,702 bbls. per day to the "stripper" wells Oklahoma Wilcox zone was given an allowable of 76,100 bbls. or 4 per cent of its rated potential; Oklahoma City Cleveland zone, 454 bbls.; Lower Simpson, 14,286 bbls.; Upper Simpson dolomite, 4,199 bbls.; Pawhuska sand, 399 bbls., and Tonkawa sand, 399 bbls., a total for Oklahoma City of 95,837 bbls. Fitts is allowed 39,230 bbls.

The Corporation Commission recently made a ruling that the use of vacuum in the Healdton field, Carter County, in excess of six points is prohibited until otherwise ordered by the commission but that a further hearing will be given on the subject on July 19.

On July 6 application of W. A. Delaney, Jr., was scheduled to be heard for a 20-acre spacing limit to be placed on wells, also a drilling and casing program and method of taking potentials in a new oil area in Cleveland and McClain counties recently opened by Mr. Delaney.

TEXAS

RESUMPTION OF SATURDAY PRODUCTION and no material adjustments in basic state allowables, will increase Texas daily net allowable production from about 1,200,000 bbls. late in June to 1,359,192 bbls. in July. This is slightly lower than the bureau's forecast of 1,360,300 bbls. daily, and still considerably below the state's basic figure of 1,602,086 bbls. for July. The five Sundays in July will provide the 242,897 bbls. daily cutback from the basic to actual production.

The July order also abolished mid-month adjustments of field allowables, which was invoked as a trial in the June order to correct for new completions and prevent overproduction. The increased burden upon the commission forces in making this midmonth adjustment was so great that it was not practical under the present organization set up—although its value as a proration measure was satisfactory.

Basic schedules of production permitted on the six operating days are shown in the table below, in barrels:

District—	June 15	July 1
Southwest Texas	282,445	278,505
Gulf Coast	245,154	241,686
East Central Texas	110,492	110,325
East Texas	510,434	512,037
West Central Texas	80,243	77,291
West Texas	216,874	217,508
North Texas	85,869	81,769
Panhandle	83,257	82,965
Total	1,614,768	1,602,086

Due to completion of new wells the July 1 basic allowable will be 15,464 bbls. over the comparable figure on June 16 after the midmonth cutback in which top allowables were placed on fields. During the first half of June accretions due to new completions amounted to 26,000 bbls., bringing the June 15 basic to 1,614,768 bbls., which was cut back to 1,586,622 bbls. on June 16.

IMPROVED GASOLINE STOCK FIGURES, and increasing consumption ahead, was given by the commission as justification for increasing the actual daily production in July. It was indicated by certain commissioners that the August order would abandon the Sunday holiday, while on the other hand there is expected to be presented a rather unified appeal to continue throughout the summer at the present level at the statewide hearing scheduled for July 18 or 19. Most Texas oil men express the strong desire to enter the winter period of 1938 with a favorable stock condition.

GAS OPERATORS IN THE PANHANDLE are anxiously awaiting decision from the three-judge federal court at Austin on the case of Henderson Co. vs. Railroad Commission, testing the validity of the recent order providing for ratable takings of sour gas in the West field. All testimony has been introduced, and the court must render its decision within 30 days. Differing from the original sour gas order which was invalidated in the Supreme Court of the United States (which was on the basis of 50 per cent acreage and potential) the new order allocates withdrawals on one-third potential and two-thirds to the product of acreage times rock pressure. Decision on this case will have an important bearing on the Consolidated Gas Utilities Co. vs. Railroad Commission case now pending trial on its merits in the state district court of Travis County, and is expected to come up for hearing next fall. This latter case involves the sweet gas area in the East field, where the commission is attempting to enforce ratable takings by the same formula.

LOUISIANA

DEPARTMENT OF CONSERVATION of the State of Louisiana made the allowable crude oil production of the state 249,725 bbls. per day in July. The Gulf Coast, Louisiana, fields are allowed 176,725 bbls. per day and the North Louisiana fields 73,000 bbls. per day. In the Coastal area Caillou Island field gets an allowable of 16,500 bbls.; Evangeline, 17,600 bbls.; Iberia, 15,000 bbls.; Iowa, 15,000 bbls.; Lafitte, 15,000 bbls., and the many remaining pools, 97,625 bbls. In North Louisiana the Cotton Valley field is allowed 5,000 bbls. per day; Lisbon, 10,000 bbls.; Rodessa, 38,000 bbls., and the remaining pools 20,000 bbls.

ARKANSAS

ARKANSAS BOARD OF CONSERVATION issued an order increasing the allowable Jones sand production of the Schuler field 9,600 bbls. to 15,000 bbls. daily. The increase given the state's largest active field followed a hearing in El Dorado at which it was testified that an increased allowable would not harm the field. The drastic cut in production over the past two months, effected by reduced allowables and curtailed pipe line purchases, resulted in a 7-pound rise in the reservoir pressure of the field. The pressure had been declining at an alarming rate during the first three months of the year, and the reverse in the trend is of considerable importance.

CALIFORNIA

THE CENTRAL COMMITTEE OF CALIFORNIA Oil Producers, official curtailment group, has set the allotment for the month of July at 615,000 bbls. per day with tolerance of 5,000 bbls. per day to take care of new wells expected to be completed during the month.

GENERAL CURTAILMENT IN CALIFORNIA is showing a gradual improvement especially in the San Joaquin Valley where large wells have been reduced to a maximum of 330 bbls. per day with few exceptions. Mountain View operators will meet again next week to discuss the best method of bringing down the field's production to the umpire's quota. Independent producers are expected to adopt whatever means are used by major companies. Fruitvale shows marked improvement in curtailment. Possible application of the California gas law was discussed and gas waste at Dominguez entirely eliminated. This has had the effect of reducing crude oil production. Petroleum Securities pinched its new discovery well in the Guijarral Hills section of Fresno County from 3,500 bbls. to 330 bbls. per day in conformity with the usual custom. Ohio Oil Co. expects to test its deep well in the Buena Vista Lake field this week but has assured Umpire Pemberton that production will be cut back to its allotment immediately. Standard Oil Co. reduced production of its deep test in the Greeley field. Despite a demonstrated flow of 13,000 bbls. daily Umpire Pemberton has given the well a potential of 6,000 bbls. daily in order to conform with potentials in Rio Bravo. The established quota for wells in the Rio Bravo, Guijarral Hills, Wasco and other similar fields is 330 bbls. per day.

KANSAS

KANSAS CORPORATION COMMISSION, in revising the July state allowable upward to 165,000 bbls. per day, gave out a warning to purchasers of oil that in its opinion the increase would "make unnecessary pipe line proration or discrimination." The allowable is 7,300 bbls. a day under the Bureau of Mines estimate of demand for the state and 5,000 bbls. above the June allowable. The commission took under advisement Stanolind Oil & Gas Co.'s application for an adjustment of potentials in the Zenith pool in Stafford County, and for adoption of uniform methods of taking potentials in the pool.

NEW MEXICO

ALLOWABLE PRODUCTION in New Mexico in July was increased to 101,600 bbls. or 10,600 bbls. per day over the June allowable. The Oil Conservation Commission of the state allows Lea and Eddy counties 100,555 bbls. per day and outside pools 1,045 bbls. per day. Top allowance per well in the state is 56 bbls. per day.

The commission finds that the agreement between the operators in the Hobbs pool dated January 1, 1936, on the development and operation of that pool has the effect of preventing waste as prohibited by act of the legislature and is fair to the royalty owners in the pool.

For some time earlier in the year considerable oil was produced in Eddy County for export and not counted in the allowable. It is said now that there is no export oil being produced in that county and it was suggested that the top allowables in the Artesia field should be the same as for wells in Lea County.

Effect of Wage and Hour Law on Oil Industry

WASHINGTON, D. C., July 4.—The impact of the new wage and hour law upon the oil industry will be chiefly on the bulk station and distribution operations, according to information available in Washington. The law, signed by President Roosevelt on June 25, takes effect 120 days later, which will be with the beginning of the final week of October.

In the meantime, the President will appoint an administrator of the law who will set up a wage and hour division in the Department of Labor, and who may begin at once to appoint industry committees to assist him in enforcing certain phases of the law, but without any orders from the administrator or other procedure the law will apply on its effective date to all employes engaged in commerce or the production of goods for commerce, except those specifically exempted, such as those engaged in agriculture, transportation, and retailing. Some definition of occupations considered to be in commerce and subject to the law may be possible by regulation or findings of the industry committees, but as the law now stands such interpretations are left to the courts and the employer has the burden of proof that his employes are not subject to the law.

Minimum Wages

The law requires payment of minimum wages of 25 cents per hour during the first year it is in effect, 30 cents per hour the following six years, and 40 cents per hour thereafter. However, the administrator, working through the industry committees, is directed to bring all minimum wages up to 40 cents per hour as rapidly as possible. The industry committees will collect data and hold hearings, following which the administrator will issue orders increasing minimum wages for given industries, and these orders may be appealed to the courts. Maximum hours are 44 the first year, 42 the second year, and 40 per week thereafter, and the industry committees and the administrator will have no power to alter these requirements.

Apparently very few occupations in drilling, production, refining, and pipe line transportation of petroleum will be affected by the new law, even if minimum wages are pushed up to 40 cents per hour immediately. However, there is very little information available in Washington on wages and working hours in the jobbing and bulk station distribution branches of the industry, and it is believed that is where the law will have its greatest effect on the industry. All retail filling stations apparently are outside the scope of the law because of the exemption for "any employes engaged in any retail or service establishment the greater part of whose selling or servicing is in intrastate commerce."

Monthly records of the Bureau of Labor Statistics show that in petroleum refining the average hours worked per week is currently about 36, and the average hourly earnings of employes is about 96 cents. In crude petroleum producing the average hours are currently between 39 and 40 per week and the average hourly earnings are about 84 cents per hour. These averages, of course, do not indicate what the minimum wages may be in certain occupations, but a detailed study of labor conditions in the petroleum industry made by the Bureau of Labor Statistics in 1934, when the N.R.A. oil code was in effect, indicates there are relatively few occupations in the producing and refining branches which will be affected by the new law.

At that time the average hours worked were 35 per week and average earnings were from 75 to 79 cents per hour. In drilling and producing petroleum, employes earned an average of 77.9 cents per hour in 1934, the study showed, and only 1.3 per cent earned less than 42.5 cents, and only 1 per cent earned less than 40 cents per hour. The average weekly hours of all employes engaged in drilling and production in 1934 were 36.2, and 87.3 per cent worked less than 44 hours per week, while most of those working more than 40 hours per week were supervisory employes.

In the refinery branch this study showed that the average hourly earnings in 1934 were 75 cents, and that only 2 per cent earned less than 42.5 cents per hour. Lowest paid workers were laborers, and only 5.5 per cent of them received less than 42.5 cents per hour. Average weekly hours of all employes engaged in refining were 35.6 in 1934, and 75 per cent of the employes worked less than 40 hours per week and 96.7 per cent worked less than 44 hours per week. Figures for the pipe line branch in 1934 were almost identical.

Stripper Wells

The employment of minors under 16, or under 18 in hazardous occupations, is also prohibited by the new act, but this feature probably will have little or no effect on the oil industry. The wages and hours of supervisors of stripper wells may constitute something of a problem, as much attention was given to this matter when framing the N.R.A. oil code, but there is a possibility some flexibility, as to minimum wages at least, may be worked out by the industry committee. The act exempts any employe employed in a bona fide executive, administrative, professional, or local retailing capacity, or in the capacity of outside salesman, and these terms are to be defined by the administrator. Time and one-half for overtime must be paid for all work in excess of the maximum work week set by the law, but the statutory maximum may be exceeded in compliance with a bona fide collective bargaining agreement, so the law probably will not interfere with the usual union contract in the oil industry which calls for a maximum working period of 72 hours in any two consecutive weeks.

Just what occupations in the oil industry will be covered by the new law is a matter that remains for interpretation by the courts, but the law is apparently broad enough to cover bulk station distributing operations. It applies to all persons engaged in commerce or the production of goods for commerce, and an employe shall be

(Continued on Page 28)

Pennsylvania Oil Investigation Quashed by Supreme Court

PHILADELPHIA, Pa.—The State Supreme Court held unconstitutional legislation creating the commission to investigate the oil industry in Pennsylvania. The decision was given in two suits against Judge Ralph H. Smith of Pittsburgh, chairman of the commission.

The commission had conducted hearings in several cities of the state before being halted by an injunction issued by the Dauphin County court, which ruled the legislation invalid. The commission was created by a joint resolution of the 1937 legislature and given a $50,000 appropriation.

Lawyers for George W. Scudder, Philadelphia oil man, and Heinel Motors Co., argued that a joint resolution for such a purpose was unconstitutional. The Dauphin court agreed. The state appealed the Dauphin County ruling.

With Judge Smith on the commission were Senators Edward J. Thompson of Centre County; Representative Michael C. Chervenak, Jr., of Cambria County; John E. McComb and William H. Godfrey of Philadelphia.

Justice Maxey's opinion held the constitution requires that all appropriations must be approved by bill and added:

"This joint resolution was not a bill and its adoption by the legislature and approval by the governor did not make it a law * * *

The court said it was unnecessary to discuss other invalidities alleged.

Counsel for Scudder and Heinel Co. also had contended that the joint resolution attempted to delegate legislative power to a commission, that the joint resolution violated the declaration of rights, and authorized the taking of property without due process of law.

The resolution had directed the commission to investigate "operation of the oil industry in this commonwealth with special reference to the adequate, efficient and mechanical supplying of lubricating oils and materials to the people" and then to make recommendations to the governor.

Judge Ralph H. Smith said after the decision the commission will meet sometime next week to determine whether any further action should be taken on the State Supreme Court's invalidation of the investigation. He added that the members also may lay plans for another act to carry out the objectives of the commission. If such a step were taken, Judge Smith said, a new act would be prepared in time for the next session of the legislature in January.

The commission had its legality attacked on two fronts in court after it served a subpoena on major producing companies requiring them to produce contracts and other records for scrutiny.

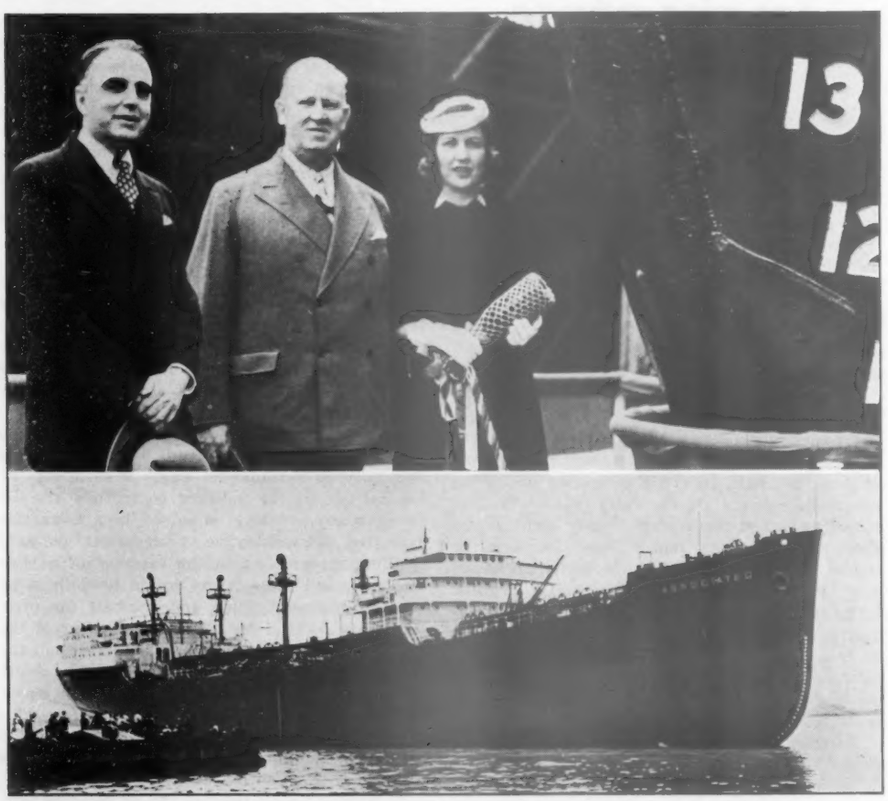
The Petrol Corp. of Philadelphia filed one injunction suit, claiming it would be required to open its confidential records to William H. Godfrey of Philadelphia, a competitor, who was a member of the commission.

George W. Scudder, of Philadelphia, filed a taxpayer's suit to prevent the commission from spending public funds. The Dauphin County court granted injunctions in both cases and made the order permanent in the Scudder case.

Judge John E. Fox, of Dauphin County Court, ruled that "the business of lubricating oil and gasoline are not affected with public interest." He held the authority the legislature sought to give the commission was too broad, adding:

"We find no limitations or restrictions of the investigation. The commission itself is permitted to be the judge of the investigation it shall make."

TIDE WATER ASSOCIATED LAUNCHES BIG MODERN TANKER



Noel Robinson, vice president; William F. Humphrey, president, and Mrs. Edward L. Shea at launching of tanker "Associated"

A 13,000-ton 13-knot oil tanker of ultra modern design and accommodations launched for Tide Water Associated Oil Co. at the yards of Sun Shipbuilding & Dry Dock Co., Chester Pa., was christened "Associated" by her sponsor, Mrs. Edward L. Shea, wife of the executive vice president of Tide Water Associated Oil Co., in the presence of a group of company officials and guests. The new tanker has a length of 462 feet, and has a carrying capacity of 4,200,000 gallons, with convenient quarters for a crew of 40 men.

Thirty-Sixth Annual Meeting of the National Petroleum Association

The thirty-sixth annual meeting of the National Petroleum Association will be held at Atlantic City on September 14-16. Headquarters will be at the Traymore Hotel.

The Fellowship Banquet will be Thursday evening. The ladies are invited. The Seaview Breakfast on Friday morning will be given by Ethyl Gasoline Corp.

Magnetic Storm

TUCSON, Ariz., July 5.—Moderate storm began July 4 at 6 a.m. and ended July 5 at 1 a.m., central standard time.

Trippett Announces Purchase Of East Texas Properties

R. G. Trippett of Shreveport, La., announces purchase of East Texas producing properties from the M. J. Grogan interests of that city. The sale comprised six leases of 152 acres in the Rusk County section, including 32 producing wells. Consideration is estimated at $1,500,000. This purchase follows a similar one this past month, when he acquired 30 wells in the Lake Divernia area of Gregg County.

Motor Car Manufacturers Expect Better Half Year

DETROIT, Mich.—The motor car industry wound up the first half of 1938 with an indicated output volume of 1,306,500 passenger cars and trucks, against 2,915,569 in the 1937 period and 2,594,508 in 1936, but the industry goes into the second half of the year with hopes much brighter than most producers held three or four weeks ago.

To Drill in New Zealand

New Zealand Petroleum Co., controlled by Socony Vacuum through Vacuum Oil Co. Proprietary, Ltd., is to start drilling in the Gisborne area in the Poverty Bay district on the east coast of North Island. The area has been investigated by various interests, including Vacuum Oil Co. Proprietary, Ltd. Drilling equipment was dispatched from the United States in May.

THE MARKETS*

CRUDE OIL: *Somerset grade crudes of eastern Kentucky reduced 10 cents per barrel. Action follows similar reductions in competitive crudes of western Kentucky and Illinois. General crude market continues strong.*

REFINERY: *Natural gasoline prices advance continues in Southwest. Refinery gasolines generally strong. Downward price adjustments for kerosene and distillates in East. Better demand for gas oils and tractor fuels. Better tone in lubricants and wax markets.*

TANK-WAGON AND POSTED DEALER: *Considerable agitation for higher gasoline prices as a result of improvement in tankcar markets. No general changes.*

FINANCIAL: *Several oil stocks establish new highs for the year. Average for 30 representative stocks for week ending July 2: High, 31.12; low, 28.53; close, 30.91. Week ending June 25: High, 29.21; low, 25.95; close, 28.97.*

**Detailed information in market section.*

Reclaimed Lube Oil Hearings Started at New Orleans

NEW ORLEANS, La., July 2.—"Reclaimers" of crankcase oils were heard here this week in the complaint recently filed by the Federal Trade Commission against the Gulf Refining Co. in connection with the company's alleged efforts to discourage the sale of the so-called "re-refined" oils. The proceedings are being followed by other oil companies due to the feeling that the action of the Federal Trade Commission will bring to a head the long controversy as to the proper place for these oils in the merchandising of motor oils.

In its complaint which was supported by testimony at the hearing held here the Federal Trade Commission contends that "the reclamation and sale of motor oils is a legitimate business engaged in by honest and reputable" firms whose products were "unfairly disparaged" in a circular distributed by the Gulf Refining Co. on December 16, 1936, to its salesmen, distributors and agents and through them to Gulf station operators urging them not to sell crankcase drainings to re-refiners. According to the complaint, the commission intends to prove that reclaimed oil is not only a legitimate product but that "many reclaimed motor oils are as good as so-called virgin lubricating oils."

It is claimed that the Gulf circular and oral representations made by Gulf representatives to station operators stated that "re-refined oils are often partially reclaimed crankcase drainings which include water, rear-end drainings, sulfur and other materials detrimental to good motor lubrication . . . many times the product of an unscrupulous agent who has done nothing more or less than strain the crankcase drainings and add a green coloring to camouflage the real identity of the product" and that "false claims and extremely low prices" are used by reclaimers to market their products. These statements "unfairly disparaged the product" and were an "unfair method of competition," according to the commission, represented by Gerald A. Rault, trial attorney. Witnesses testified that reclaimed oils compared favorably in major characteristics with virgin oil and that the Gulf Refining Co.'s action cut off the major source of suppy of at least one re-refiner.

Harry S. Pond, Jr., president of Lube-Laundries, Inc., New Orleans motor oil reclaimers, testified that 75 to 80 per cent of his firm's raw materials are drainings picked up from service stations and some 20 per cent are secured from garages and automobile agencies servicing new cars and customers who bought cars from them. Mr. Pond, who is a former Gulf employe, testified that when he established his present business in December, 1935, he began buying from Gulf dealers both because he knew many of them personally and for the additional reason that he "was familiar with the high quality of Gulf oil." Fully 50 per cent of the stations through which he secured drainings were Gulf-operated, he said.

With the issuance of the circular, Pond testified, practically all the Gulf station operators with whom he had done business for approximately a year, discontinued selling to him. The Gulf "L-3 lease" under which they operate, he explained, contains either a 10-day or a 30-day cancellation clause through which the company can dispense with their services if dissatisfied with their management and they could not afford to do anything contrary to the company's wishes. Gulf either owns the station outright or has a lease on it, he declared, and sub-leases to the operator.

Lube-Laundries, which is the only commercial re-refiner in Louisiana as far as he knows, and which operates in interstate commerce, also serves fleet operators whose drainings are picked up and re-refined separately from miscellaneous drainings, Pond testified.

After the distribution of the Gulf circular, he added, many of his customers began to buy elsewhere as he was unable to secure additional sources of supply soon enough to retain their business. He estimated that while his sales and profits had increased steadily during the year he operated prior to Gulf's interference, his sales decreased by 50 per cent when the circular caused a "sudden shortage" of raw materials. Stations usually discarded their drainings, he added, which made it doubly hard to secure additional drainings in time to retain these accounts.

Pond described his reclamation process, affirming that the resultant product ranked between Gulfpride and Gulflube in quality. Comparing it with Gulf Traffic lube, he said, was "like comparing a Buick with a Model T."

J. J. Kramer, sales manager for the Triploil Co. of New Orleans, Lube-Laundries sales agents through whom approximately 80 per cent of their reclaimed oil is sold, testified that after the distribution of the circular throughout the New Orleans division, which includes several southern states, Gulf dealers were "afraid" to sell to Lube-Laundries for fear of possible Gulf retaliation. Daily production and sales, he said, were some 200 gallons before issuance of the circular and two or three shifts were operated to keep up with the demand. After the circular appeared and Gulf station supervisors and salesmen spoke to operators about selling drainings to reclaimers, production and sales dropped to between 50 and 60 gallons per day. Practically no solicitations were made for new supplies or new customers.

On cross-examination by Alexander Smith, Gulf attorney, Kramer was able to definitely recall only two large users who discontinued their purchases from him as a direct result of Gulf's efforts however. Many small users were affected, he said.

Several Gulf station operators testified that they discontinued sales to Lube-Laundries after the circular reached them, some "because customers who had bought oil from them began buying from Lube-Laundries at a cheaper price" and others simply because they had been instructed not to sell to reclaimers any longer.

Several large reclaimers of motor oils—fleet operators, hauling contractors, engineers, etc.—testified as to the merits of re-refined oil. A few of these were Lube-Laundries' customers and others reclaim their own oil. Re-refined oil compares favorably with the new oil they previously used, they testified, giving approximately the same mileage and causing no additional repair bills. Laboratory tests made by the New Orleans city chemist at the request of the city Sewage and Water Board, Public Belt Railroad and Department of Public Property, were introduced to show that reclaimed oil was as good, for all practical purposes, as virgin oil and compared favorably in all major characteristics. The tests, the chemist testified, were done to prove the reclaimed oil was satisfactory in accordance with government specifications.

C. A. Spratling, lubrication expert for the Sewage and Water Board, testified that he formerly had oil re-refined by Lube-Laundries and was now reclaiming the board's own oil with satisfactory results. Both reclaimed oils, he said, are superior to virgin coastal oil and he recovers as much as 85 per cent in reclaiming Pennsylvania oils.

Gulf, the commission contends, unfairly disparaged competitive products in representing to dealers and consumers that reclaimed oils are not desirable and are inferior to Gulf products; that the distributors of reclaimed oils find a market through false claims; that the reclaimed oil busi-

Thorough Investigation Indicated

The action of the Federal Trade Commission in citing the Gulf Refining Co. in connection with the company's alleged efforts to discourage the sale of reclaimed lubricants by its dealers is expected to result in a thorough investigation of the manufacture and sale of "re-refined" oils.

These operations in many cases have been carried on surreptitiously by operators outside the oil industry. The used oil is obtained from filling stations, reclaimed and then resold to station operators. It has been an important factor in the substitution evil, these cheaper oils being substituted for the branded oils of the major marketing companies and sold to consumers who have no protection in the matter. It is estimated that in some of the larger cities reclaimed oils represent 10 to 15 per cent of the total sales.

Hearings in the case started last week at New Orleans. The Federal Trade Commission will continue hearings at several other points. The Gulf company will then present its defense testimony.

ness is not a legitimate one; that many reclaimed oils are nothing but "partially reclaimed crankcase drainings containing water, rear-end drainings, sulfur and other detrimental materials," and that reclaimed oils are the products of unscrupulous dealers who camouflage the real identity of their product by coloring matter.

"The false, misleading and unfairly disparaging representations" made by Gulf, charges the complaint, "had and have a tendency to mislead and deceive a substantial portion of the purchasing public into the false and erroneous belief that the statements are true, that reclaimed oils are greatly inferior to Gulf products, and into the purchase of Gulf products in preference to reclaimed oil because of this erroneous belief. Such misleading statements and unfair disparagements divert trade unfairly to the Gulf Refining Co. and sellers of their products from the sellers of reclaimed oils."

Such statements, asserts the commission, induce operators to refuse to sell crankcase drainings to Gulf competitors for reclamation, thereby limiting their sources of supply.

The New Orleans hearing was held before Examiner Miles J. Furnas. A second hearing is scheduled for Pensacola, Fla., on July 8 with several others to follow in various cities. After the commission has completed its testimony additional hearings will be held at which Gulf witnesses will testify.

WASHINGTON

(Continued from Page 25)

deemed to have been engaged in the production of goods "if such employe was employed in producing, manufacturing, mining, handling, transporting, or in any other manner working on such goods, or in any process or occupation necessary to production thereof." If precedents under the Walsh-Healey government contracts act are followed, the law will not be applied to research workers, outside crews, service and repair men, instructors, superintendents, office employes, custodial workers, watchmen, and maintenance men.

Industry committees are to be appointed by the administrator "as soon as practicable," and the administrator will determine what industry or branch of an industry comes within the scope of each committee. Thus there might be a single committee for all industries engaged in producing fuels, or there might be separate committees for petroleum production, refining, pipe lines, and bulk station distribution. The size of these committees will be determined by the administrator, but each must have equal representation of employers, employes, and the general public.

MEXICAN CASE

(Continued from Page 17)

ignore the rights of private property, few investments abroad can be regarded as safe, and the flow of foreign capital, so necessary to the further development of Latin America, will be choked off through loss of confidence.

The people of Mexico have suffered most from the ill considered action of their radical leaders. The peso has dropped 30 per cent, internal business reduced 35 per cent, foodstuffs and other merchandise raised 30 to 40 per cent, production costs boosted above the capacity of the people to buy. Oil production has dwindled and government revenues from this once prolific source have suffered correspondingly. Among the country's 18,000 oil workers there is reported to be widespread disillusionment. Not only have they failed to realize the wage increases and control of the business promised to them but many of the provisions for double pay and social benefits customary under operation by the companies have been eliminated. Control of the business has been vested not in the workers as they were led to believe but in the hands of political appointees.

Today, as a result of the failure of government operation, after a fair test, it is more than ever apparent that the only possible solution is the return of the properties to the owners. Preceding that there should be a frank survey of the conditions which led up to the expropriation to permit of an understanding which will prove equally helpful to the Mexican people and the oil companies in avoiding a repetition of the troubles which proved so injurious to the development of an industry vital to the prosperity of Mexico.

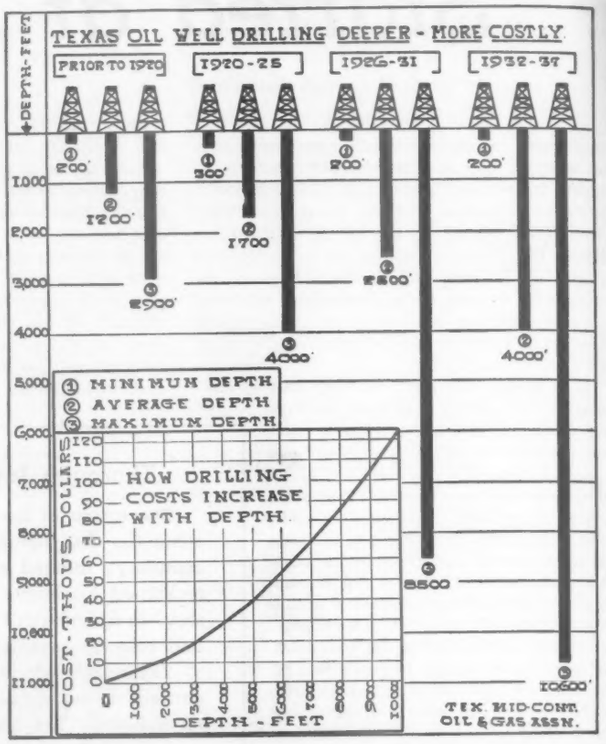
Average Depth of Texas Wells Three and a Third Greater

The average depth from which oil is produced in Texas today is three and one-third times greater than prior to 1920, according to a survey by the Texas Mid-Continent Oil and Gas Association.

Today Texas oil is produced from wells having an average depth of 4 000 feet, with a maximum producing depth of 10,600 feet. Prior to 1920 the average depth of producing oil wells in Texas was only 1,200 feet, with a maximum producing depth of 2,900 feet. Since 1926 the average depth of Texas oil wells has shown an increase of 1,500 feet, while the maximum depths have shown an increase of 2,100 feet.

The extent to which depth affects drilling and completion costs is shown by the fact that the cost per thousand feet of hole ranges from $6,000 for the first thousand feet to $20,000 per thousand feet when the depth reaches 11,000 feet. Thus, while a thousand-foot well may cost $6,000, this does not mean that an 11-000-foot well would cost $66,000, but actually entails a cost of $143,000 because of ascending ratios of cost to depth of hole recorded by actual experience. In a 4,000-foot well, where the first thousand feet of hole costs $6,000, the last thousand feet costs $10,000, making the total cost of such a well about $29,000.

Greater depths involve not only more time for drilling and more equipment, but heavier and more expensive equipment which is necessary to stand the stress and strain of penetrating deep subsurface formations. Deep drilling involves great hazards, breakage and loss of drilling equipment, entailing tedious and expensive delays and frequently results in the complete loss of a prospective well. One "fishing" job, to recover broken equipment from a deep well often costs as much as the total hole.



Oil-World Exposition Appoints New Directors for 1939 Show

At the annual meeting and election of officers and directors of the Oil-World Exposition, Inc., held in the Rice Hotel, Houston, Tex., the members approved the action of the directors which provided for continuation of the two-year basis for holding the Oil-World Exposition in Houston. The next show will, therefore, be held April 24 to 29, 1939, and continue on alternate years thereafter, with Ed G. Lenzner, as general manager.

In discussing the future of the Houston show, George A. Hill, Jr., president of Houston Oil Co., called attention to the fact that prior to the 1937 exposition a poll of the oil companies was then taken which showed that the larger companies operating in Texas and Louisiana had stated that they would send their employes to the oil exposition at Houston because of the proximity of the oil fields.

All the directors of the Oil-World Exposition, Inc., except three were reelected for another term and 76 new directors elected. The executive committee was increased to 11 members but the officers remained as last year.

Officers: President, John R. Suman; executive vice president, Chase Sutton; vice presidents, J. S. Abercrombie, George A. Hill, Jr., W. L. Childs, Wallace Wilson; secretary-treasurer, R. L. Dudley, and general manager, E. G. Lenzner.

Executive committee: J. S. Abercrombie, J. S. Abercrombie Co.; S. P. Brown, Hughes Tool Co.; Frank S. Carothers, Norvell-Wilder Supply Co.; W. L. Childs, Reed Roller Bit Co.; Ray L. Dudley, Gulf Publishing Co.; George A. Hill, Jr., Houston Oil Co.; Joe H. Russell, Gulf Oil Corp.; W. B. Sharp, Mission Manufacturing Co.; John R. Suman, Humble Oil & Refining Co; Chase Sutton, Pure Oil Co., and Wallace Wilson, Wilson Supply Co., all of Houston, Tex.

Obituaries

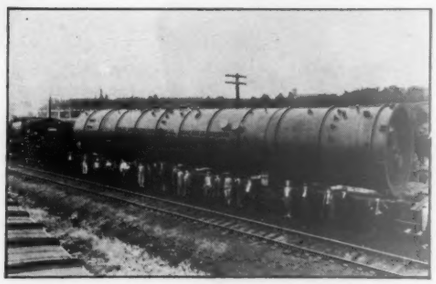
AMBROSE MERCHANT, 67, Houston, Tex., oil man, died last week. He held extensive oil interests in the Sour Lake and Hull fields, Jackson League at Sour Lake being named for his grandfather, Stephen Jackson, owner of the league.

TUBE-TURNS have MANIFOLD advantages!

ASK a dozen men why they use Tube-Turns, and you may get a half-dozen different answers—*all correct!* . . . But the most important feature—the one feature most responsible for Tube-Turn advantages, is this: *Tube-Turns have uniform wall-thickness at every point.* . . . How this effects the speed and economy of welding, the strength and soundness of the welded joint, is fully explained in Tube-Turn Catalog 107. Ask your local distributor for a copy—or write us direct. . . . Tube-Turns, Incorporated, Louisville, Kentucky.

★The word "Tube-Turn" is NOT a necessary general trade name for welding fittings. It is the registered trade-mark for the products made by Tube-Turns, Incorporated, under their patents.

Refinery Expansion



Reported as the largest single railroad shipment ever to leave St. Louis, this tower is ready to start an 893-mile journey to the Pure Oil refinery at Smiths Bluff, Tex. Dimensions, 92 feet long, 13 feet 2 inches wide; weight, 245 tons.

Plans for Construction of Minot Refinery Rushed

SHELBY, Mont. — A complete survey including available gallonage for refined product markets, freight rates, and complete cost sheets to aid in determining the probable returns on the proposed Minot, N. Dak., refinery of Dakota Refining Co., Cut Bank, Mont., is being made by the company. The plant is to be built by Cut Bank operators to care for additional production in the northern Montana field, and the survey is being made to determine its feasibility. Freight rates to the North Dakota site from the Montana field are at present one of the main stumbling blocks.

The proposed refinery, with a capacity of 2,000 bbls. daily, would boost to 5,000 bbls. the capacity of latest refinery additions for Montana outlets. Some delay has been occasioned in the awarding of a contract for construction of a 3,000-bbl. refinery at Shelby, by Producers Refining Co. Several bids have been received on the project but to date notice of the awarding of the contract has not been released. Operators, however, expect to make the first run of crude to this plant late in August of this year.

Three Controversies on Cracking Patents Decided by Court

WASHINGTON, D. C.—Three long-standing controversies over patents on processes for cracking petroleum were decided by the U. S. Court of Customs and Patent Appeals at its final sitting for the term.

Probably the most important was a controversy between Robert E. Humphreys and William R. Howard over a process for cracking naphtha bottoms for motor fuels, in which the court awarded the patent to Mr. Humphreys. This controversy goes back to World War days when a cracking product described as naphtha bottoms or steam bottoms from motor spirits was a waste product. Mr. Humphreys at that time was an oil chemist of the Standard Oil Co. of Indiana at Whiting, Ind., and one of his research projects was to develop a method of cracking this refractory material. Mr. Howard filed an application for a patent on a process to accomplish this on September 8, 1919, and received a patent, while Mr. Humphreys filed an application March 31, 1922, and also received a patent. The controversy arose over applications for reissue patents.

Mr. Humphreys showed that he conceived the idea in the summer of 1917 and claimed he reduced it to practice in September, 1917, but Mr. Howard contended Mr. Humphreys did not actually reduce his invention to practice until 1920. The record in the case showed that in September, 1917, Mr. Humphreys obtained satisfactory results from a 20-gallon laboratory still which he designed, and he recommended that the company construct a commercial size still to utilize the process. However, because of war conditions, the company could not obtain steel for its construction. The still was completed in 1920 and proved satisfactory in cracking naphtha bottoms with Mr. Humphreys' process.

The patent examiner held with Mr. Howard that Mr. Humphreys had not reduced his invention to practice until 1920, but the board of appeals of the Patent Office ruled that the successful operation of the laboratory still constituted reduction to practice. This finding was upheld by the court, holding the successful operation of laboratory equipment, particularly when coupled with orders for the construction of a commercial size plant, constituted the reduction to practice required by the patent laws.

The court also affirmed the Patent Office in awarding Lev A. Mekler a patent for a process for cracking petroleum which was contested by Orin G. Kaasa. The patent covers a process for producing antiknock gasoline by introducing liquid petroleum stocks containing a substantial portion of gasoline into a heated conduit and shielding a portion of the conduit to lower the rate of heat from a point in the conduit in advance of the point where substantial vaporization begins to the point where the vapor phase change substantially ceases. Both men filed applications for patents in the fall of 1932 and both claimed priority of conception and of reduction to practice.

In another case the court awarded priority of invention to Jean Seguy for a process for cracking oil by suddenly reducing the pressure on oil vapors in order to dry them. Mr. Seguy filed application on December 27, 1927, and a renewal of the application on December 3, 1931, and this was contested by Arthur E. Pew, Jr., who filed an application for a patent on a similar process on November 9, 1929, and had been granted a patent on May 23, 1933. In filing his application, Mr. Seguy copied two claims from the patent issued to Mr. Pew, and the court upheld the Patent Office in permitting this practice and awarded Mr. Seguy the priority of invention.

Remodeled Wyoming Refinery To Be Opened Early in July

CASPER, Wyo. — Operations of the Tri-State Refinery, formerly known as the Fern Oil Co. plant, at Thermopolis, are scheduled to be resumed early in July according to announcement by G. W. Garrison, owner of the plant. Initial capacity of the remodeled refinery will be approximately 300 bbls. daily, the crude to be furnished from the Black Mountain field in Hot Springs County, North Central Wyoming.

The plant will be operated under H. J. Walden as general superintendent with C. F. Koenig as manager of the refinery. Headquarters of the company will be maintained at Thermopolis. Formerly owned by Bruce Sullivan, the Thermopolis refinery went into receivership early in 1938 when suit was brought by the state of Wyoming for delinquent oil taxes.

Reforming To Be Discussed At W.P.R.A. Meeting

SHREVEPORT, La.—The important subject of reforming will be the special feature of the regular monthly meeting of the technical group of the Ark-La-Tex Division of Western Petroleum Refiners Association, to be held July 8 at Kilgore, Tex. On this occasion George B. Murphy of Universal Oil Products Co., Chicago, Ill., will read a paper entitled "Reforming." This will be illustrated by lantern slides. An open forum discussion will follow Mr. Murphy's talk, giving the refiners assembled full opportunity to present their problems.

In his paper Mr. Murphy will give a brief history of reforming, its present status and a general flow diagram of the modern unit. A discussion of the modern unit will include yields, capacities and costs for typical straightrun gasolines followed by the chemical engineering principles involved in the design and estimate of the yield and quality of the product. Mr. Murphy has been connected with Universal in the capacity of manager of its research and development laboratories for the past eight years, and was recently transferred to the job of acting as Universal Oil Products Company representative.

Cosden Starts Up New Dubbs Cracking Unit

The Cosden Petroleum Corp. placed on stream last week its newly constructed Dubbs cracking unit as an addition to its Big Spring, Tex., refinery.

Pipe Line News

Allegan County, Michigan, Will Have Increased Pipe Lines

SAGINAW, Mich., July 4. — Commonwealth Pipe Line Co. has asked the state Public Utilities Commission for authority to construct a pipe line network to serve the Allegan County oil fields.

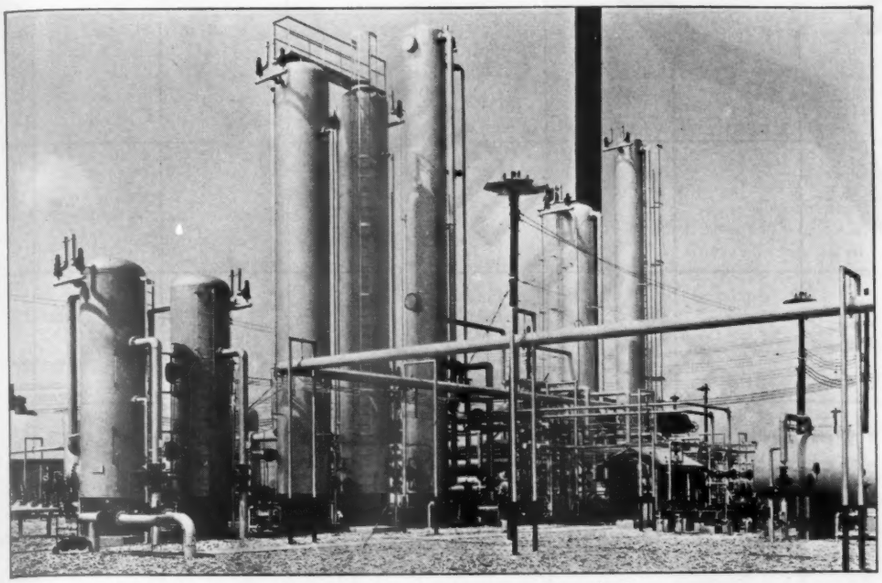
The company has asked permission to connect its truck-loading racks in Dorr, Monterey and Salem townships with a 4-inch or 4½-inch pipe line extending through the Dorr field to a truck-loading rack in Hopkins Township and a tankcar loading rack on the Michigan Central Railroad at Hopkins. It also has asked authority to install a pipe line from the truck racks and storage plants in Salem Township to Muskegon and a line from Salem Township to Vriesland in Ottawa County, on the Pere Marquette Railway line. The pipe line also would connect with truck-loading facilities at Vriesland.

Texas Empire Pipe Line Co. Valuation Set by I.C.C.

WASHINGTON, D. C.—The Interstate Commerce Commission has set a tentative valuation of Texas Empire Pipe Line Co.'s owned and used properties for common carrier purposes at $14,500,000 as of December 31, 1934. The company operates 916 miles of trunk pipe line in Oklahoma, Kansas, Missouri, Illinois and Indiana.

On a Louisiana line

Natural Gasoline



Continental Oil Co.'s crude oil stabilization and gasoline recovery plant in the Tepetate field, Louisiana. About 15,000,000 feet of gas per day is being returned to the well and machinery for compressing and returning 5,000,000 additional feet of low-pressure gas is now being installed. Equipment, from left to right: Two separators, two absorbers, the crude stabilizer, a fractionating still and gasoline stabilizer

Phillips to Start Operating New K.M.A. Gasoline Plant

Phillips Petroleum Co. is making final tests at its new gasoline plant in the K.M.A. field, and expects to enter normal operations within the next week. This is a compression type plant, having an installed horsepower of 1,000, and a rated daily capacity of about 5,000,000 feet. Low-pressure residue lines have been laid for return of gas for lease purposes. Later, if and when the proposed pressure maintenance projects are begun in the field, high-pressure return lines will be laid.

California Natural Gasoline Output Increased in May

Production of natural gasoline in California during May recorded a slight increase over that of the previous month, according to the monthly report of the San Francisco office of the Bureau of Mines. Total output during May was 56,589,000 gallons as compared with 55,364,000 gallons in April. Deliveries to refiners and to jobbers, brokers and blenders likewise showed an increase so that the result was a net decline in stocks, comparable figures for the last day of the two months being 2,394,000 gallons and 2,371,000 gallons, respectively. A summary of natural gasoline plant operations for the month is as follows:

Field—	Gas treated (thou. cu. ft.)	Nat. gaso. produced (gallons)
San Joaquin Valley:		
Belridge	3,459,447	2,151,654
Elk Hills	95,702	126,364
Kettleman Hills	9,593,553	15,532,683
Midway-Sunset	1,133,558	2,363,494
Mountain View	454,628	564,518
Miscellaneous	977,128	614,997
Coastal district:		
Elwood	642,138	869,749
Rincon	182,616	261,596
Santa Maria	141,740	411,473
Ventura Avenue	3,223,125	4,764,994
Miscellaneous	493,826	467,532
Los Angeles Basin:		
Brea-Olinda Coyote	487,635	1,375,103
Dominguez	1,991,029	3,157,471
El Segundo	459,202	793,666
Huntington Beach	1,287,938	3,689,513
Inglewood	287,792	412,977
Long Beach	2,326,026	8,307,920
Montebello	348,148	441,541
Richfield	261,614	527,127
Rosecrans	410,664	750,745
Santa Fe Springs	1,905,963	5,658,897
Seal Beach	451,573	613,981
Torrance	171,434	405,423
Miscellaneous	949,176	2,326,115
Total (all fields)	31,735,655	56,589,533

Distribution

	Gallons	Gallons
Stocks beginning of May	2,394,129	
Production during month	56,589,533	
Delivered to refineries		55,858,328
Delivered to jobbers, brokers and blenders		621,228
Blended at plants for production of motor fuel		6,057
Losses		127,142
Stocks end of May		2,370,307
Total	58,983,662	58,983,662

	Gallons	Gallons
Liquefied petroleum gas production	2,203,392	52,462
Motor fuel produced	10,722	255

May Construct Gasoline Plant Near Eastland, Tex.

The Arab Gasoline Co., of Eastland, Tex., is making gas tests in the Bryson field of Jack County, Texas, preparatory to the construction of a gasoline plant in the area. The Arab company has been operating a compression type plant in West Central Texas, south of Cisco, but recently shut down and sold its connections to the Lone Star Gas Co. Equipment at the former plant will be moved to Bryson if the plant is built there.

Claims for "Phantom" Tractor Gasoline Tax Refunds Found

DENVER, Colo.—Excessive claims for refunds under tax exemptions are regarded by authorities as constituting one of the greatest abuses of the whole gasoline tax situation. An interesting case of large-scale refund claims has been disclosed in Colorado.

Although there are 19,554 permits for gasoline tax refunds on tractors outstanding in the state, the number of tractors reported by local assessors is only 14,331, according to State Treasurer Homer F. Bedford. He is investigating the 5,223 "phantom" tractors. There are a total of 28,041 gasoline tax-refund permits now outstanding in the state.

In 1937 gasoline tax refunds totaled $1,214,000. For the past three years refunds have been increasing at the rate of more than $200,000 annually in the state.

Natural Gas

Canadian Gas Production Shows Increase in Four Months

OTTAWA, Ontario.—Natural gas production marketed from all Canadian fields in April totaled 2,928,521,000 feet compared with 3,175,266,000 feet in March and 2,390,000,000 feet in April, 1937. The output for the first four months of 1938 was 14,140,495,000 feet, or 10.8 per cent over the output of 12,760,000,000 feet in the same period last year.

Imports of mixed (natural and artificial) gas in April were 10,385,000 feet valued at $6,633 compared with 11,968,000 feet valued at $10,011 in March.

Natural Gas As Carbon Black Consumed by Motorists

America's 30,000,000 motorists last year bought nearly 20,000,000,000 gallons of gasoline. It took nearly 10 times as many feet of natural gas to provide motorists with tires. The average tire contains nearly 5 pounds of carbon black. Approximately 270,000,000 pounds of this product were used in the manufacture of tires last year. More than 3,250 feet of gas is required to furnish sufficient carbon black for an average tire. Each time a motorist buys a full set of tires he buys 20 pounds of carbon black or 13,000 feet of gas.

The two gases are alike in one respect. Both carry a tax. Gasoline is taxed at an average rate of 5.4 cents per gallon. Tires, including the carbon black they contain, are taxed by the federal government at the rate of 2¼ cents per pound.

July Gas Allowable for Rodessa, Texas, District

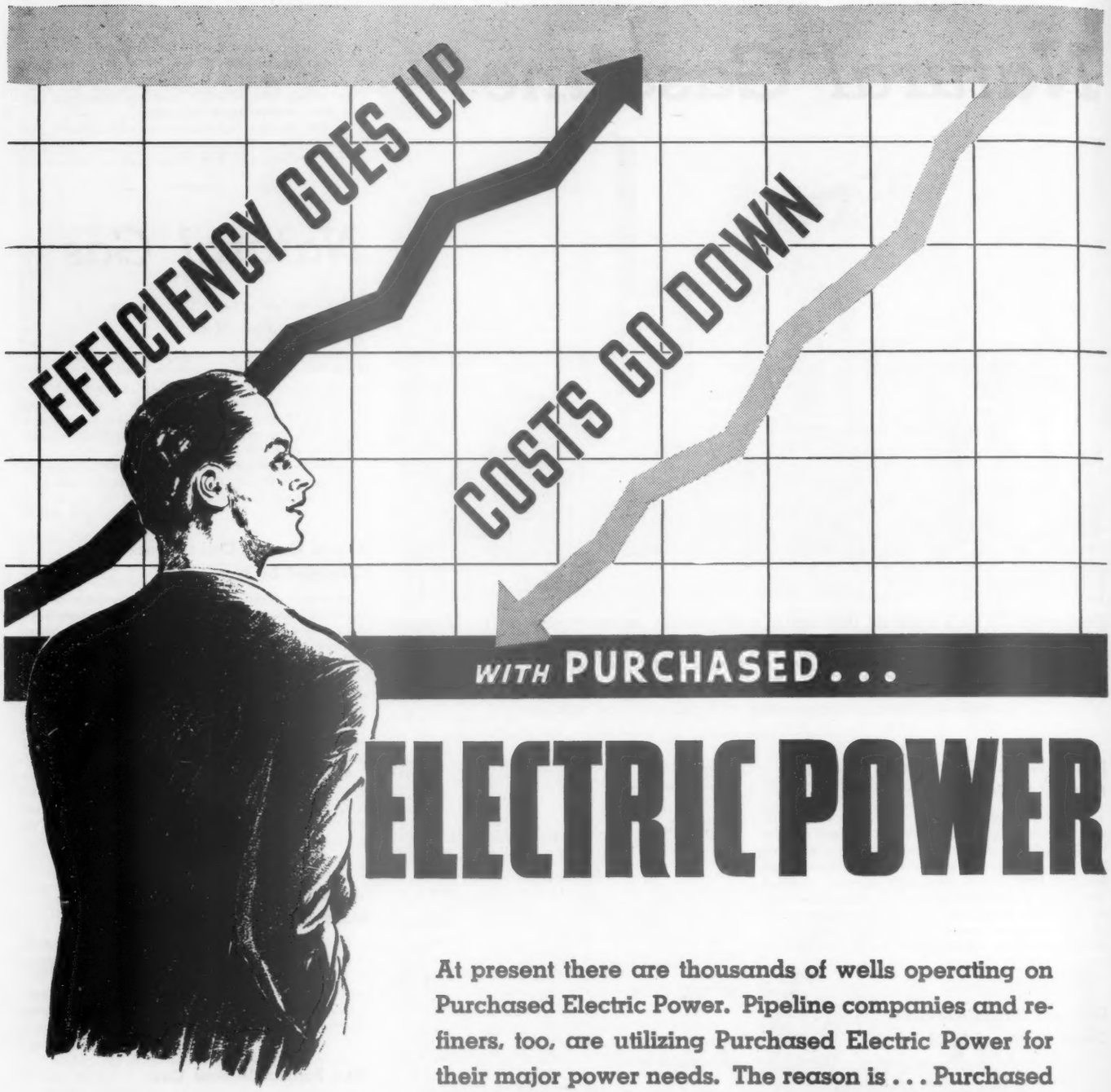
AUSTIN, Tex.—The Railroad Commission has fixed the July natural gas allowable for the Texas portion of the Rodessa field at 55,742,000 feet daily. The monthly allowable of 1,728,000,000 feet was divided as follows: Young Dees sand 851,000,000 feet; Hill sand 307,000,000 feet, and Gloyd sand 570,000,000 feet.

West Panhandle Sour Gas July Allowable Reduced

AUSTIN, Tex.—The Railroad Commission has set the July daily allowable production for sour natural gas in the West Panhandle field at 651,657,000 feet, a reduction of 26,915,000 feet under the authorized production for June.

Power Commission Chairman Favors Rate Base Change

WASHINGTON, D. C.—Clyde L. Seavey, chairman of the Federal Power Commission, says his agency is prepared to receive complaints from local agencies dealing with gas rates. He was one of the leaders in the fight to abolish the old rule of "reproduction cost new," which has been followed by the courts, and he intervened last winter in the Supreme Court in the Pacific Gas & Electric case, seeking a discard of the "reproduction cost new" theory. Since the commission advanced the "prudent investment" theory in the Pacific Gas & Electric case, it is possible it will attempt to assert the same valuation theory when it assumes jurisdiction of interstate gas rates.



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PETROLEUM ELECTRIC POWER CLUB

Service on New Fields

HARPER OIL AND GAS FIELD, ECTOR COUNTY, TEXAS

Compiled by The Oil and Gas Journal, July 1, 1938

Approved name:

The Harper oil and gas field. The field was named for O. C. Harper, of Midland, Tex., who was prominently identified with its discovery.

Geographic location:

The field is in central Ector County, West Texas, just north of Highway 80.

Principal cities and towns near the field:

Odessa is 8 miles east of the field; Midland, 28 miles east; Monahans, 29 miles west; Fort Worth, 348 miles east. All these cities are on paved U. S. Highway 80.

Location of supply houses:

All supply stores serving the great Permian Basin are near the Harper field. Odessa is one of the largest oil-field supply centers in Texas.

Railroads serving the area:

The Texas & Pacific Railroad's transcontinental line runs through all the cities mentioned, and 2 miles south of the field proper.

Trucking and hauling facilities:

The entire trucking and hauling facilities of western Texas are available to operators at Harper, the base for many of them being at Odessa.

Hotels and other accommodations:

Modern brick hotels are established in Midland, Odessa, and Monahans. In addition tourist camps and temporary quarters are available at Odessa.

Schools and churches:

Odessa, county-seat of Ector County, offers educational and religious advantages for those living in the territory.

Electric power and gas companies:

The Texas Electric Service Co.'s West Texas system serves the field. Company gas systems supply fuel for drilling and domestic purposes.

DEVELOPMENT

Early history:

The early history of the Harper field is somewhat similar to that of several other Permian Basin fields in that the discovery well did not indicate its actual potentialities, and the field remained inactive until important extensions were drilled later to "rediscover" the pool.

In attempting to extend the trend of east platform fields northward through Ector County several dry holes were drilled near the present Harper field in 1931-33, some of which yielded favorable showings and evidence of production nearby. The independent firm of Broderick & Calvert, Fort Worth, took a portion of the original block on a partial farmout basis and completed the discovery well, No. 1 E. F. Cowden, on September 26, 1933. Initial production was 60 bbls. before shooting, and 306 bbls. after. Location was in section 25, Block 44, T.&P. Survey. The second completion was not made until May, 1935. This well, drilled in the same section, did not reveal the actual potentiality or extent of the field. In 1936 Shell Petroleum Co. knocked the field off "high center" by going out a half mile west of the discovery well on an expiring lease and completing a 500-bbl. well. L. H. Wentz definitely established the presence of a large and prolific structure by completing his 2-mile western extension in section 28 soon thereafter, the test gauging over 1,000 bbls. initially. Development did not reach its peak at Harper until the first of 1938.

Completions to date:

There are now 120 producing wells in the Harper field.

Present drilling operations:

Total operations in the Harper field now number 31, of which 6 are rigging up and 25 drilling. This is the most active drilling field in the Permian Basin.

Present daily average production:

Top field allowable for Harper during June has been set at 8,730 bbls. Under the present proration order new completions during the month will not be permitted to exceed this top field allowable.

Manner of allocation:

Allocation is upon a marginal (25 bbls.), plus potential basis (potential factor .0538258). As of June 1 the average allowable per well was 90 bbls. The gas limit factor in this field is 2,000 feet per barrel.

Spacing pattern:

With the exception of three early drilled wells, all development has been on the pattern of one well to 10 acres. This density has largely been along competitive property lines, and not on inside lease locations.

Accumulated production:

Year	Annual production	Accumulated
1933	7,000	.....
1934	25,000	32,000
1935	33,000	65,000
1936	33,000	98,000
1937	182,558	280,558

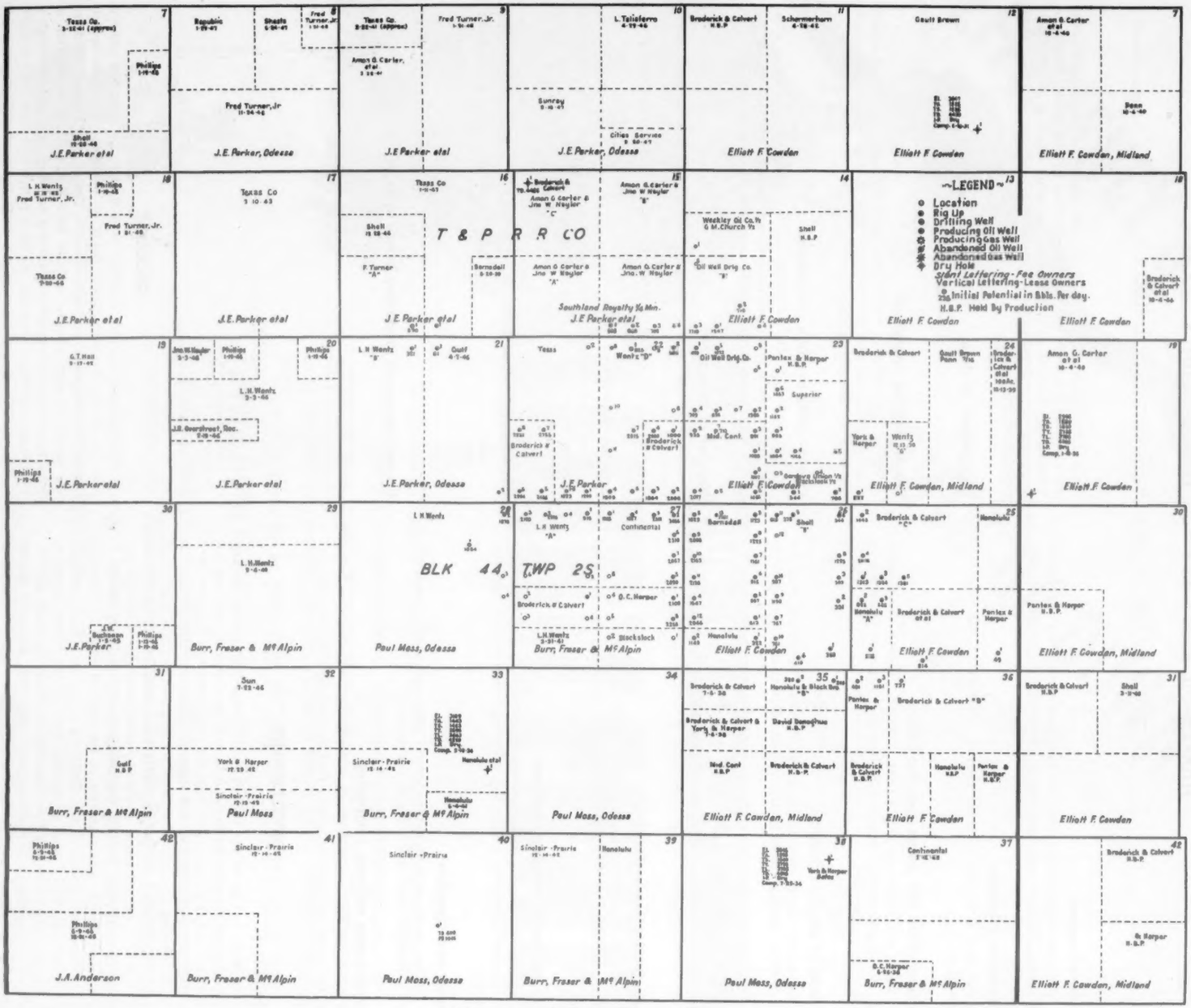
Present owners of producing leases in field:

Company—	Number producing wells June 1
Barnsdall Oil Co.	12
Blackstock Oil Co.	2
Broderick & Calvert	14
Carter-Naylor	2
Continental Oil Co.	7
Gulf Oil Corp.	1
Honolulu Oil Corp.	7
Lee Drilling Co.	1
York-Harper and others	1
Mid-Continent Petroleum Corp.	8
Oil Well Drilling Co.	5
Pantex Oil Corp.	3
Shell Petroleum Co.	12
Superior Oil Co.	6
The Texas Co.	2
Fred Turner, Jr.	2
L. H. Wentz Oil Division	13

GEOLOGY

The Harper structure is rather typical of fields along the eastern platform of the Permian Basin, being an elongated anticline located almost centrally between the Goldsmith, Foster, and Cowden fields to the north and east, and the Judkins field to the south. Production is from lenticular or irregularly occurring zones of saturation through a 150-250-foot section of Permian, which is penetrated from 3,975 to 4,250 feet depending upon position on structure. Potential differences noted under the same type of flow and completion indicate wide variations across relatively short distances. There seems to be a series of reser-

Service on New Fields



Harper pool, Ector County, Texas

Zingery Oil Map Co., Fort Worth, Tex.

Service on New Fields

voirs running through this section of the Permian as there is little, if any, evidence of vertical communication between wells. Some have much higher gas-oil ratios than their offsets, and several local pockets of water have been penetrated without establishing a uniform water level. Gas is the largest expelling force, most of which is dissolved with the oil. The lenticular condition is more noticeable on wells near the east side of the uplift. Some directional trends of permeability have been indicated across the field, which probably will make for better producers and higher ultimate return on certain leases than others. Acid tests show a marked drop in solubility where increases in oil are obtained, indicating that the pay is in the dolomite streaks of the lime.

FUTURE DEVELOPMENT

Proven area:

With the producing limits tentatively defined by dry holes or small producers in all directions except the southeast and central west, there now appears to be from 6,000 to 7,000 productive acres in the Harper pool. Major extensions not yet indicated are possible, however.

Undrilled locations in proven area:

Four wells have been drilled on a 40-acre pattern, and the remainder of development has been to the density of one well to 10 acres. An attempt was made by some operators to have a 20-acre spacing rule injected into the allocation formula, but no action was taken by the Texas Railroad Commission following a public hearing. It was contended by others that the 10-acre plan was necessary to drain the field efficiently in view of the lack of communication between wells in the lenticular reservoir.

Assuming that development will continue on the 10-acre pattern, there remain approximately 500 wells to be drilled within the present indicated proven area.

Estimated rate of drilling during next 12 months:

The Judkins field (sometimes called Penwell) about 8 miles to the west of Harper, which has been producing for 12 years, offers the best basis of comparison regarding probable recovery, as the two pools are not dissimilar as to pressures, initial productions, type section, etc. At Judkins a variable spacing pattern has been followed. Along competitive property lines on the east side of the field, a 10-acre pattern has been followed, while in the center and west much wider spacing prevails. The whole field averages one well to 32 acres. To date about 16,000,000 bbls. of oil has been produced from the field, averaging 2,810 bbls. to the acre. However, in the 10-acre density portions, a recovery of over 10,000 bbls. an acre has been obtained.

The discovery well has produced 80,000 bbls. during its first five years of life, and when offsets were drilled they all made larger producers, indicating no loss by drainage.

Recoveries on individual tracts will vary as the lenticular producing zones differ in saturation, and permeability. An estimated average recovery of 10,000 bbls. per acre appears reasonable.

DRILLING

Types of drilling equipment used:

Diesel-powered mechanical rigs, with 5- or 6-inch shafts, are commonly used in the field. After development provided adequate supplies of lease gas, some steam rigs appeared. At present many of the rotary rigs seen are larger than necessary. They were moved in not because they were needed but because they were idle in other areas and available for service.

The great majority of wells are completed with cable tools, using the spudder or unitized all-steel cable-tool rigs, diesel powered.

Type bits used:

The first 800-1,000 feet is drilled with drag-bits, and the remainder of the rotary hole to the casing-seat with rock-bits. An average of about 14 rock-bits per well is required. Usually a 8¾-inch hole is cut between surface pipe and oil-string seat.

Casing program:

Only slight variations have been made in the casing program throughout the field. About 250 feet of 12½-inch second-hand pipe is set and cemented to top. For the oil string, 7-inch or 5⅞-inch new casing is set at about 4,000 feet, and cemented with 150 sacks.

Speed in drilling:

The rotary hole to about 4,000 feet is drilled in 20 to 30 days. However, 50 to 60 days usually are required to drill the section with cable tools, shoot, and clean out.

Drilling problems:

Problems encountered in making the rotary hole are simply those incident to drilling a straight 4,000-foot hole at minimum expense and time. The real drilling problem is in cleaning out after the shot. Certain streaks in the section seem to cave a great deal after shooting, and thus far the only satisfactory way found to meet the situation is to bail until cavings are exhausted.

One unusual feature is that many of the leases are so worded that all wells must be standardized and drilled in with cable tools. This requirement has prevented certain operators from drilling in with rotary oil under pressure, and cleaning out after the shot by washing through rotary pipe.

As potential is a factor in the allocation of Harper allowables to individual wells, shooting with 500 to 1,000 quarts of nitroglycerin through the entire section generally is done. Most of the oil saturation occurs in the dolomitic portion of the Permian, which does not have a high degree of solubility when treated with acid.

PRODUCING PRACTICES

All but 16 producing wells flow their production at Harper. The pumping wells are edge producers or those drilled into a tight section, lacking sufficient permeability to flow naturally. Wells are produced through flow beans or chokes so that allowable production can be taken continuously over the 24-hour period. Some free gas is present in certain gaseous lenticular streaks, but most of the gas remains in solution and is the chief expelling medium.

Heavy-duty individual pumping units are employed at present pumping wells, and their use probably will continue. Topographical conditions are favorable to the use of properly balanced heavy-duty backside crank units to 10-acre offsets.

GENERAL PHYSICAL DATA

Pressures:

No physical tests on bottom-hole pressure are taken, largely because overall field studies would not be of much value, due to the wide variations evident across the irregular producing section. Some of the better wells report an observed casing pressure of about 1,400 pounds initially.

Gas-oil ratios:

None of the wells in the field at this time exceed the gas limit of 2,000 feet per barrel set by the commission for the Harper pool.

NATURAL GAS

There are no gasoline plants at this time, but efforts are being made from two sources to provide the field with a plant outlet. Phillips Petroleum Co. is planning to lay an 8-mile gas line over from its Judkins field gasoline plant if it is successful in obtaining sufficient gas contracts to justify the expense. Warren Petroleum Co. also is negotiating for contracts in the field and may construct a separate plant.

PIPE LINES

Humble Pipe Line Co. and Shell Pipe Line Co. provide the field with its two crude oil outlets.

INTERNATIONAL NEWS

Standard May Erect Refinery in Hungary to Refine Native Oil

Discussions are underway between the European Gas & Electric Co., an affiliate of the Standard Oil Co. (N. J.) and the Hungarian government over the possibility of erecting a refinery to process crude oil production developed in the Szentador-Lispe field, also referred to as the Budafaputza field.

The company's investigation is being made with a view to determining what tax and other concessions it would obtain if it were to erect its own refinery. Indications are that an agreement will be reached, but in the event of failure the state was expected to buy the crude oil from the company, directly or indirectly through a company to be designated by the government.

The refinery, according to reports, would be built at Nagykanizsa. The Budafaputza area now contains two producing oil wells and one gas well. The field was discovered by the gas well and further exploration resulted in completion of the first oil well near the end of 1937. Further drilling is to be prosecuted. Preliminary indications are that the field in southwestern Hungary can eventually supply most of the country's internal petroleum requirements.

Oil Consumption in Poland Turns Country Into an Importer

One of the oldest oil-producing countries in Europe is facing conversion of its role as an exporter of petroleum to an importer. The country is Poland where internal consumption has increased to an extent making further export shipments ill advised so long as production continues to decline. During the first quarter of the current year, Poland is reported to have produced about 907,100 bbls. of crude oil, a decline of 1.2 per cent compared with the first three months of 1937. Runs to refineries in Poland increased 5.3 per cent the first quarter of this year totaling about 920,100 bbls. To meet refining schedules based on internal consumption, Polish suppliers were compelled to draw on storage for about 13,000 bbls. of runs to stills.

Internal consumption of gasoline and lubricating oils has advanced sharply in Poland during the first three months of 1938 compared to the first quarter last year and there appears no escape from a further decline in production as the year progresses. The Borysiav district is the country's chief source of production and it is making a less impressive showing so far in 1938 than during the past year when 50 per cent of the nation's crude was recovered from that area. Importance of Borysiav fields is all the more apparent when compared with 1936 when 60 per cent of Poland's oil was produced from this source.

The extension of industrial activity and spread of motor transportation in movement of goods and individuals are factors responsible for the sharp increase in demand for gasoline and lubricating oil. Internal consumption of kerosene and gas oil was not as high the first three months of this year as in 1937, but Polish crude selling for about 170 zloty per ton (7.45 bbls.) is much too valuable to balance refinery operations on kerosene and fuel oil exports.

Colombian Production Rises But Peru Falling Behind

The accelerated production pace in Colombia is being maintained by Tropical Oil Co., the only concern now moving crude oil from that South American country. In neighboring Peru, International Petroleum Co., parent of Tropical, is falling behind the pace set in 1937.

During May, Tropical Oil Co. produced 1,804,111 bbls. of crude in Colombia boosting the total output for the first five months to 8,464,045 bbls. The output in May compares to 1,678,580 bbls. produced in May, 1937. Accumulative production during the first five months of 1937 totaled 8,247,206 bbls.

International produced 1,116,059 bbls. in Peru during May, a daily average of about 36,002 bbls. The most recent production figures compare with 1,081,263 bbls. in April, a daily average of 36,042 bbls. For the first five months International has produced 5,575,276 bbls. in Peru compared to 6,149,778 bbls. for the same period in 1937.

In addition to International, Cia. Petrolera "Lobitos" produces about 7,500 bbls. per day in Peru for an estimated five months' total of 1,139,853 bbls. and "Zarritos" produces about 3,300 bbls. per month for a five-month estimated total of 16,500 bbls. Peru's total output from January through May is, therefore, estimated at 6,731,629 bbls.

Colombia's importance as a supplier of petroleum will be increased substantially in the early part of 1939 when South American Gulf Oil Co. new pipe line is completed from the Barco concession. It is estimated that Colombian Petroleum Co., subsidiary of Texas Co. and Socony-Vacuum, has production of approximately 20,000 bbls. daily developed at the present time. Without changing the drilling program currently under way on the Marco concession it will be possible for Colombia Petroleum to at least double the present potential before the pipe line is placed in service.

Production in Egypt May Be Increased by Exploration

Egyptian crude oil production in January, 1938 totaled 97,483 bbls., a daily average of 3,145 bbls., or approximately the same rate which prevailed for the similar month in 1937. December, 1937, production in Egypt totaled 98,155 bbls.

Yield from the older Egyptian fields continues its gradual decline, but preliminary exploration work now in progress under the more liberal mining law provisions may alter this trend later this year or in the reasonably near future. Preliminary reports are that several areas have been investigated and found to reflect encouraging indications.

Venezuela's Three-Year Program Includes National Refinery

Construction of a national refinery is one of the projects in President Contreras' three-year program for Venezuela. In addition, the plan calls for a long list of public works including sanitation, expansion of production, education, irrigation, military garrisons, parks, roads, dry docks and airports.

Dredging of the bar dividing Lake Maracaibo from the open sea to permit entry and exit of larger boats is included in the program at a cost estimated at 60,000,000 bolivars. The program outlined by President Contreras before the Venezuelan congress last month is to begin this year. He estimated that the total government expenditure would amount to 1,210,148,000 bolivars.

Since the petroleum industry contributes the principal source of income, it has a special interest in the three-year plan. In this connection the president said the government proposed to exercise supreme vigilance in collecting proper taxation and in making claim for such amounts as may be due the government in this connection. The president, apparently referring to the enactment of an income tax, stated that it would be necessary to establish new bases of taxation.

In some respects, the three-year project is disturbing to American and British oil companies with large investments in that country. On the other hand, the expenditures contemplated may have a tendency to improve, or at least leave undisturbed, the friendly and satisfactory relations between oil companies and the government.

Iranian Crude Oil Production Sets All-Time High Record

Iranian crude oil production set an all-time high record in March when output totaled 8,104,123 bbls., an increase of approximately 28 per cent over the yield of 6,297,570 bbls. for the same month in 1937. By virtue of the sharp increase in March, the crude output in Iran for the first quarter totaled 20,156,898 bbls., an increase of nearly 21 per cent over the first quarter of 1937, when yield totaled 16,675,785 bbls.

The summer upswing in Iranian crude production did not start in 1937 until July, indicating that European demand is materially ahead of last year. The big increase in March may be accounted for in part by speeding up of military stores at that time when tension was highest over Germany's absorption of Austria.

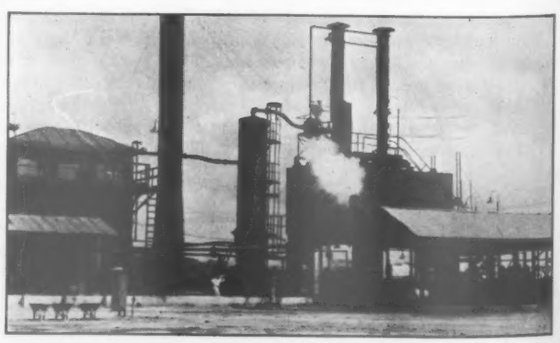
Iran's production in terms of barrels is arrived at by converting tons at the rate of 7.515 bbls. Thus the March production figure of 1,078,393 tons marks the month as the most important since Iran became a producer of crude oil.

International Tanker Pool Votes to Increase Dues

In an effort to halt progressive declines and to restore some degree of stability to the tanker charter market, the International Tanker Pool meeting in London voted to increase dues to 10 per cent on voyages and 12½ per cent on time charters.

Since June, 1937, dues had been three-quarters of 1 per cent on voyages and 1 per cent on time charters. It is expected that the increase in dues will force a number of owners to tie up their ships because it would be impossible for them to operate and pay higher dues, while rates remain at the lowest levels of the season. Recently the demand for tankers has been exceptionally slow and the bulk of the business booked during the past two months has been at declining rates.

Some of the large American oil companies, who operate vessels under foreign flags, are members of the pool.



Topping plant at Cabimas, Venezuela

ENGINEERING and OPERATING

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TIME DRILLING IS USED TO ADVANTAGE IN COTTON VALLEY FIELD

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By correlating the data showing the time it takes to drill through the various geologic formations in one well in the Cotton Valley field of Louisiana it has been possible to apply these data to other wells being drilled in the field and thereby anticipate conditions to affect major economies in time and equipment.

REPAIR OF OLD WELLS REQUIRES THE USE OF SIMPLE METHODS

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Stripper-well operators are forced through economical considerations to economize in every way in the handling of their wells. Modern methods of petroleum engineering might be applicable to repairing these old wells but the cost of such methods as applied is in general too high. This condition opens a large field for the application of better and cheaper engineering practice for the production of these old wells.

GRAVITY CURVES IN EVALUATING OIL STOCKS FOR DESIGN WORK

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In the design of refinery equipment it is often necessary to predetermine the characteristics of certain products without being able to inspect samples of these products. By correlating the gravity of petroleum fractions with their other characteristics it has been possible by the use of curves to anticipate rather accurately the other characteristics of the fractions.

TYPICAL FAILURES OF CRACKING STILL TUBES IN OIL REFINERIES

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Trends in the nature of cracking tube failures have been traced by the authors for a period of 20 years. Improvements in the metal from which the tubes have been made are pointed out. It is further shown that tube failures are now relatively rare and the average life of cracking tubes has been multiplied many times over the 20-year period.

CONTROL OF ELECTROLYTIC CORROSION IN PETROLEUM REFINERIES

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Second half of detailed discussion of methods for combating electrolytic corrosion in the condenser boxes, exchangers and water systems of a refinery. Designs for typical systems are offered.

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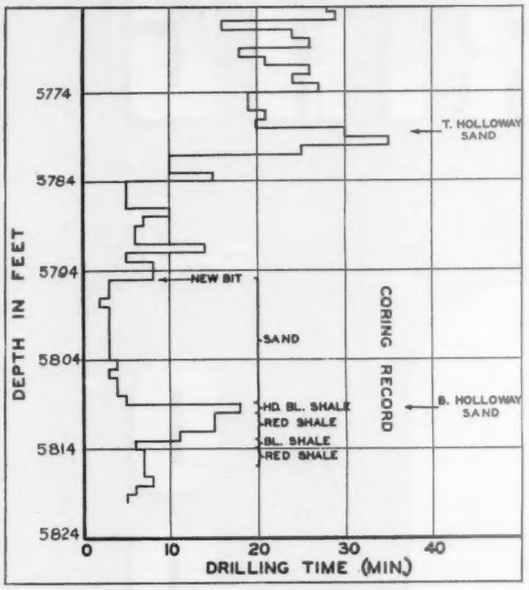


Fig. 1—Application of time drilling in top of Travis Peak, showing the Holloway sand

Time Drilling Used in Cotton Valley

By GEORGE WEBER

The use of time drilling has found widespread application in the Cotton Valley field of North Louisiana. This simple method of recording drilling progress through producing formations has been adopted by all of the major operators at Cotton Valley. These account for over 95 per cent of the current field development.

Time drilling records serve a number of useful purposes. The chief advantage supplied Cotton Valley operators, however, is in determining tops and markers as a guide to coring programs. In addition they may be used in correlation during coring. The latter practice is by no means new, however. It has been used for some time in the Permian Basin of West Texas and New Mexico where the porosity of the producing dolomitic limestone is readily interpreted by the drilling time. The same use is made of timing in the Lisbon field of North Louisiana, in the Pettit lime. It is also universal among operators while coring, to check partial core recoveries with time coring data, in order to determine the relative positions of hard and soft formations, when recovery of the latter fails.

The variety of formations and the lack of uniformity in some of the sands at Cotton Valley allow no such definite interpretation as is accomplished in the Permian Basin. But the success of the practice illustrates that time drilling may be found useful in fields where it might not generally be considered workable. In this respect it should be emphasized that fast drilling in West Texas and New Mexico indicates the porous zones of the producing formation, while the reverse is true in Cotton Valley, where the pay sands drill harder than the other sections encountered.

The time and expense involved in keeping time drilling records is practically negligible. In Cotton Valley, where common practice is to time each foot of formation at various depths, the kelly is marked off in 1-foot intervals, and the driller or a helper notes the exact time at which each mark reaches the table. Standardized forms aid this duty. Such forms provide for the tabulation of the depth limits of each foot, the exact time of day, the time interval for each foot, the number of points carried, and the rotary speed of the bit. In addition, pump pressure, mud gravity and viscosity, number of lines and type of bit are recorded. Thus a permanent record is kept of the information which any experienced driller has constantly at hand.

In order to make the timing of formations as indicative as possible of the type of section encountered, a constant weight on the bit and a fixed rotary speed are desirable. In considering constant weight, a rechecking of the weight indicator is necessary to allow for the variable readings which it will show for the same actual weight, arising from temperature changes during day and night drilling. Mud characteristics and other pertinent factors are generally constant over the intervals which are timed.

It should be noted, that while time drilling is of considerable value at Cotton Valley, the information is not an infallible index of the formation drilled. It is necessary to check with cuttings and later with cores and Schlumberger logs in order to obtain best interpretations. Information thus gained is useful in examining the time logs on subsequent drilling wells.

The current development at Cotton Valley is directed to two producing horizons; the Holloway sand, 15 to 20 feet from the top of the Travis Peak, and the Bodcaw sand of the Lower Marine. The Upper Travis Peak, being deltaic in deposition, is nonuniform throughout the field, and the Holloway sand, which is a part of it, varies in thickness, porosity and saturation where it is present at all. The lenticular nature of the sand and its spotty deposition makes it impossible to definitely predict a Holloway producer at any location in the field.

Although the Holloway sand itself drills differently in separate wells, its position in the formation, if present at all, is indicated by markers lying immediately above it. These markers consist of two hard streaks. In the base of the Pettit lime of the Lower Glen Rose formation are from 2 to 4 feet of very hard dense gray lime, somewhat fossiliferous at times. Then a slight shale break of from 2 to 4 feet is encountered, and below this a similar thickness of dolomitic, extra hard siltstone which is, however, limy and fossiliferous at times. The top of this last marker is chosen by geologists as the top of the Travis Peak. Where it is missing, the formation will go from black shale into red

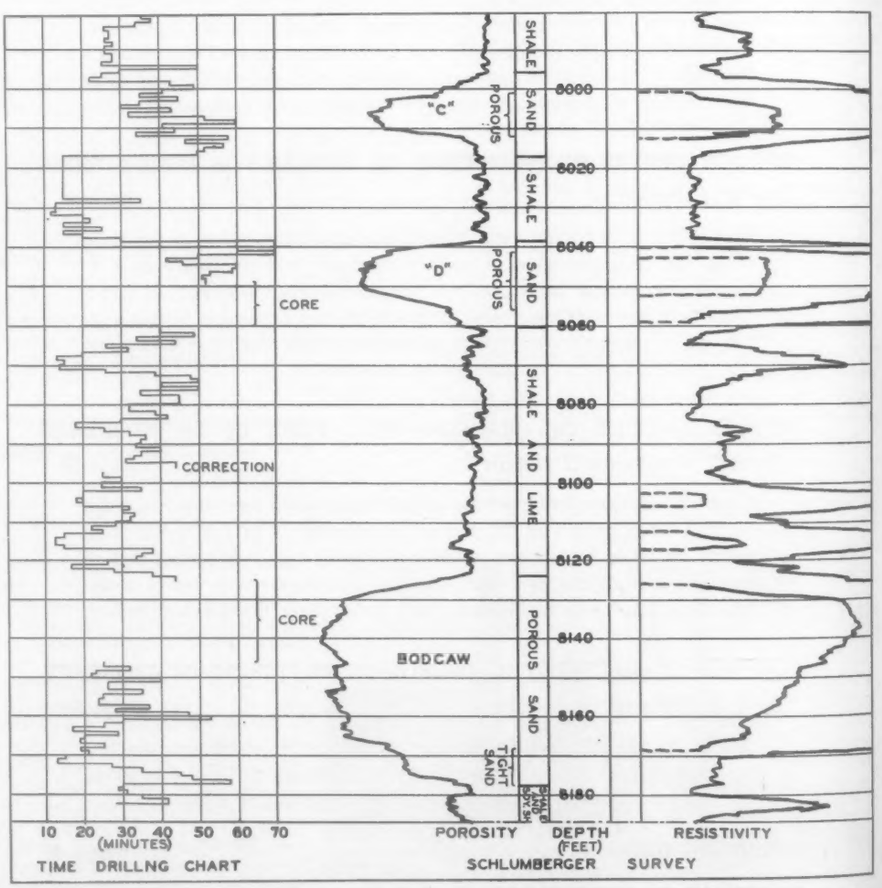


Fig. 3—Correlation of three Lower Marine sands and their porous zones by means of time drilling and electric logging

Advantageously in Development

shale, gray siltstone or mudstone. These two hard zones mentioned above can be readily interpreted in Schlumberger records.

The Holloway sand itself includes some siltstone which cores and drills like sand. Drilling progress through the sand, where present, however, is variable, and a close check on cuttings is necessary where coring is not practiced. The fact that production in the Holloway sand is unpredictable, makes necessary a thorough check of the formation, before going deeper to the blanket Bodcaw sand, which has not yet been limited in the field.

The principal producing horizon at Cotton Valley is the Bodcaw sand. It occurs below the Travis Peak in the Lower Marine or Cotton Valley formation. Sands in the Lower Marine drill harder than shales and limes, aiding the adaptation of time records.

Above the Bodcaw sand proper, from which all deep wells are producing, lie four smaller sand bodies, lettered in the order in which they are encountered. The "A" sand consists of sandy lime with a very small amount of sand and no porosity. It is dark gray in color. The "B" sand, also dark gray, is a hard sandy lime with no porosity. The "C" stringer consists of either shaly sand or pure sand, with a calcareous or limy bind, and usually has 4 or 5 feet of sandy shale above the true sand if it is present. This has been found porous and saturated in only a few wells and is productive in none to date. The largest of the sand stringers above the Bodcaw, the "D" sand is fairly consistent over the field, varying from 15 to 26 feet in thickness. In a majority of cases there is no hard cap rock in this sand. It is characterized by a dark greasy appearance when first cored, being a gray sand containing dark specks of residual bitumen.

The Bodcaw sand proper has a hard fossiliferous sandy lime at the top and bottom, which aids in recognizing it in time-drilling. The sand body is gray and well saturated with gas and distillate in the main body of the field. Upon weathering, it becomes water white. Occasionally small shale breaks are found within the sand body. An important southeast outpost well which was recently completed showed two sections of the Bodcaw, separated by a 6-foot shale break. The top section of 15 feet carried gas and distillate, and the bottom 13-foot section produced crude oil, the first to be found in the Lower Marine.

Application of Timing

These characteristics of the producing formations in the field are valuable guides in interpreting time logs. Although timing is used by all operators in the same general manner, the procedure varies somewhat with individual companies.

In drilling a well at Cotton Valley, the operator recognizes the possibility of an oil producer in the Holloway sand and the practical certainty of a gas and distillate well in the deeper Bodcaw. Lower cost and better allowable production make Holloway wells the more desirable of the two. It is necessary, then, that the Holloway sand be thoroughly examined and definitely condemned before proceeding to the deeper horizon.

Some operators core the top of the Travis Peak formation before approaching the critical depth. Others choose to core only the top of the Holloway sand.

When the top of the sand is to be cored, its depth is estimated and a sufficient interval of 50 feet is allowed above the section where timing is begun. The markers in the base of the Lower Glen Rose and the top of the Travis Peak are picked up in the timing data and checked with cuttings. From a knowledge of the drilling characteristics of formations in the Travis Peak, operators can go in the hole and core the top of the Holloway sand, if present, with little error.

While all companies who use time drilling in the field check the top of the Travis Peak and the top of the sand, not all attempt to core the latter. One company has cut drilling time considerably by time drilling into the sand and taking but one core in the body itself. In this practice the careful timing, closely checked by examination of cuttings, has not yet failed to guarantee a good sand core where the sand was present. If 2 or 3 feet of soft section is drilled, however, and there is doubt about its character, the operator shuts down and pumps cuttings, allowing sufficient time to circulate the last cuttings to the surface for a definite check of the section.

An example of this practice in the Holloway sand is illustrated in Figure 1. The time drilling

(Continued on Page 44)

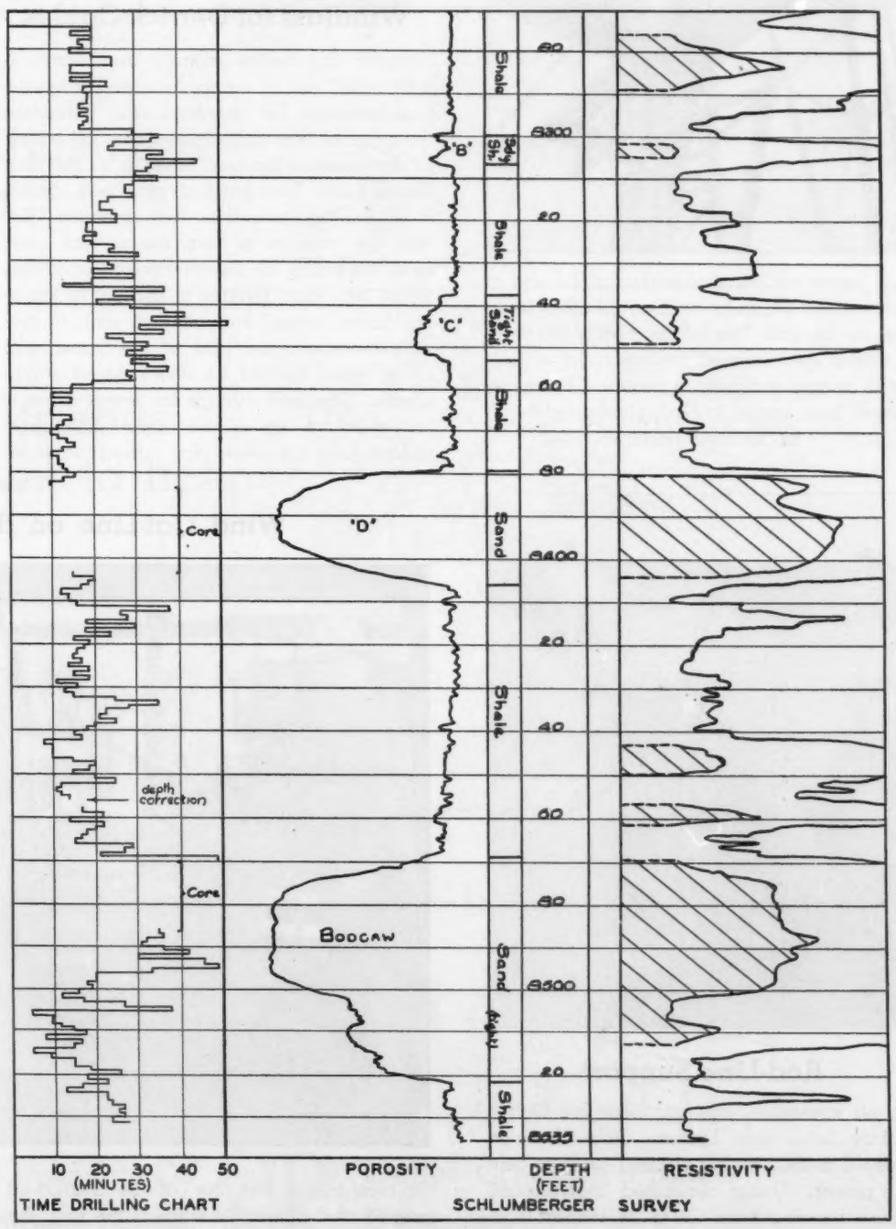


Fig. 2—Comparison of time drilling and Schlumberger record in Lower Marine sand series of the Cotton Valley field

OPERATING IDEAS

Cat-Walk Extension

A producing company operating in the Oklahoma City field has an unusual cat-walk. It enables the pumper to service all bearings from this walk. A section of the walk works on a hinge, and can be lowered so that he

may reach his hanger-bearing at the end of the walking beam as well as all other bearings on the unit. The folding part of the walk is raised and lowered by means of a light chain suspended over a pulley. Chains attached from above to each side steady it in its lowered position.

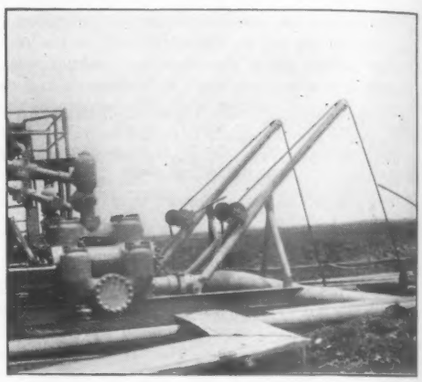
Rod-Line Support

An oil company, operating in the Osage County field, near Lyman, Okla., has an unusual method on his pull-rod setup to central power. Using reclaimed crown-block shives, ranging from 20 to 24 inches high supported on a piece of pipe with two caps welded to it to serve as bearings.

Windlass for Derrick Cables

Forming the device entirely from scrap 2-inch pipe, one oil company uses an ingenious windlass for attaching and tightening the pairs of guy cables used at each corner of the derricks serving its wells in the East Texas field. Two pairs of pipe legs, driven well into the ground to form parallel "Xs" with the cross at or near the ground level, from the frame for the improvised windlass, while two short lengths of pipe, with crowbar holes burned through their ends to provide leverage, are laid in the upper and lower vees formed by the crossed frame pieces. The wire guy for the lower drum is led over the top of the upper pipe as a sheave, and the lower pipe turned to tighten the coils of wire around it. In like manner the other (in this instance the lower) guy is led around the lower drum as sheave and coiled on the upper drum. Then, as slack is taken in over each of the drums, the two short lengths of pipe are pulled even tighter into the cross of the side frames, locking the entire structure together under the pull of the guys, each tending to lock more tightly the other's drum. With such a windlass it is easy to regulate the strain on any given set of guys, and to maintain accurate derrick alignment during the service operation.

Raise or Lower Pump Lines

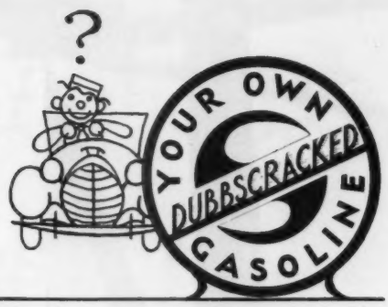


A major company used the above arrangement on the Gulf Coast to raise and lower the slush-pump suction line. Note the extended skids and rubber suction hose.

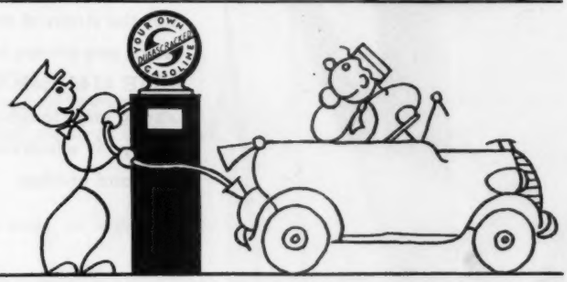
Wind Cat-Line on Reel to Promote Safety

On most rotary rigs, the cat-line is allowed to coil up on the derrick floor. Often it becomes tangled and kinked. Aware of the fact, the crew built a reel with a ratchet so that when the line is rolled tightly it stays in place until ready for use again. This is a time-saver, as well as a line-saver, and promotes safety among the crew on the derrick floor.

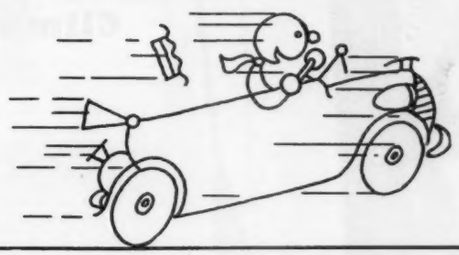
YOUR STATION?



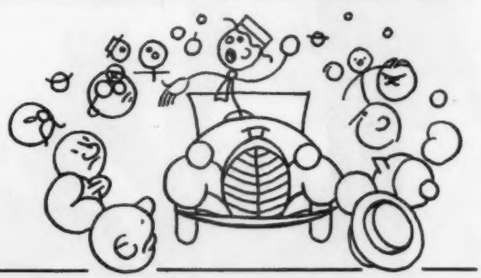
What is this Dubbscracked gas? says he



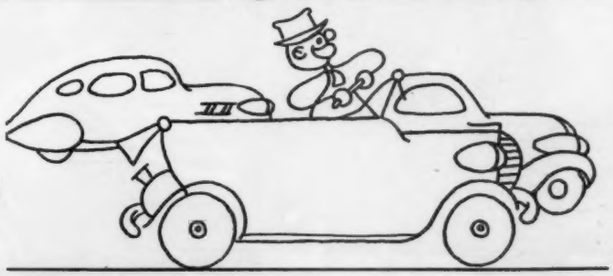
Just gimme five, I'll try and see



Oh gosh, old bus runs like a deer

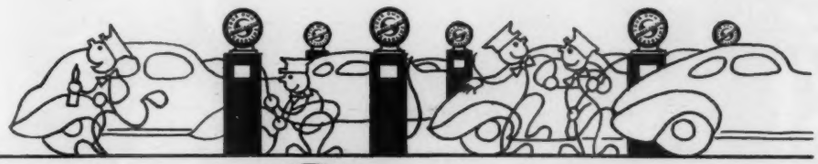


Come on my friends there's news to hear



They drive right in and prove it true

Dubbscracked brings business—holds it, too



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MOLY

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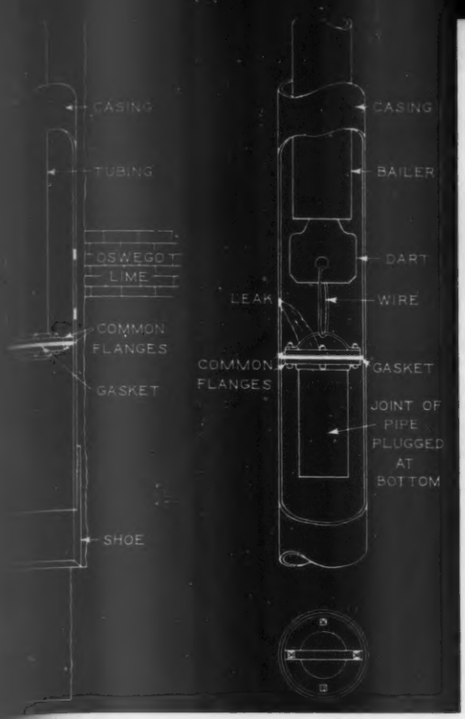

Repair of Old Wells Requires the Use of Simple Methods

By L. G. E. BIGNELL

Fig. 1—(Left) Flange on tubing type casing testers. Fig. 2—(Right) Swab bailer type

Of the 350,000 or more oil wells in this country 325,000 can be classified as "strippers" or wells making less than 5 bbls. of oil daily. Many of these wells are being repressured or produced under vacuum and others are aided by waterflooding. Many of them require reconditioning to some degree because they were drilled more than 15 years ago and relatively light casing was used in completing the wells. Cementing behind the casing was not generally practiced when these wells were drilled. A bottom-shoe was used and shut-off was secured by seating the shoe upon some impervious rock above the producing formation. Cavings collected behind the casing and in some places these bridged. Formation gas or water in the annular space behind the casing escaped into other porous strata until such time as accumulation of cavings behind the casing shut off avenues of escape. Corrosion of the casing or leaks around the bottom of the shoe allowed water to escape into the well and it was then necessary to make repairs.

Wells of this type are not uncommon in northeastern Oklahoma and southeastern and eastern Kansas and other areas of old production. Drilled with cable tools more than 20 years ago they were usually finished with 6¼-inch 13-pound or 6⅝-inch 17-pound casing in an 8-inch hole. Gas is usually found in the Oswego lime. Water is also present in the base of this section. When the wells were first completed the shoe made a tight shut off and the water accumulated in the casing and filled up the annular space behind it until the gas was shut off. When the casing leaked the water ran out from behind it and the gas again escaped into the well. This is one of the signs of damaged casing.

Locate Leak

Knowing the casing is leaking and water is escaping into the well the next thing to do is to locate the leak and make repairs. One way to test the casing is to run a special packer the diameter of which is the same as the inside of the casing. This should be run on the bottom of a string of tubing. This packer (Figure 1) can be made by using two common flanges of the proper bore for the tubing and placing between these flanges a disc of rubber gasket or belting which has been cut to proper size to make a tight fit inside the casing to be tested.

Running this tubing and packer into the hole from which gas is escaping will divert the gas into the tubing as long as the packer is above the point of gas entry. As soon as the casing leak is passed the gas will escape in the annular space between the tubing and casing.

Another way to test for leaks is to fill the well with muddy water and then bail down from the top of the fluid until clear water appears. The mud below the point at which fresh water enters will remain almost undiluted while the fluid in the hole above the place of water entry will be thinned and eventually become almost clear. The bailer can be run to certain depths to "feel" for the mud. The surface of the undiluted mud, when found, is usually near the entry of the water. This method may indicate whether water is coming through a casing leak, around the shoe, from the sand or the bottom of the hole. This method of testing cannot be used on wells under vacuum.

If the string of casing shutting off water has been landed with a column of mud behind it and water later appears in the well the condition of the water, whether clear or muddy, may tell the operator whether it is upper water or water from some source below the shoe. This test is not always positive but if muddy water does appear indications are that the leak is around the shoe or through the oil or gas sand from a nearby well that has been mudded off.

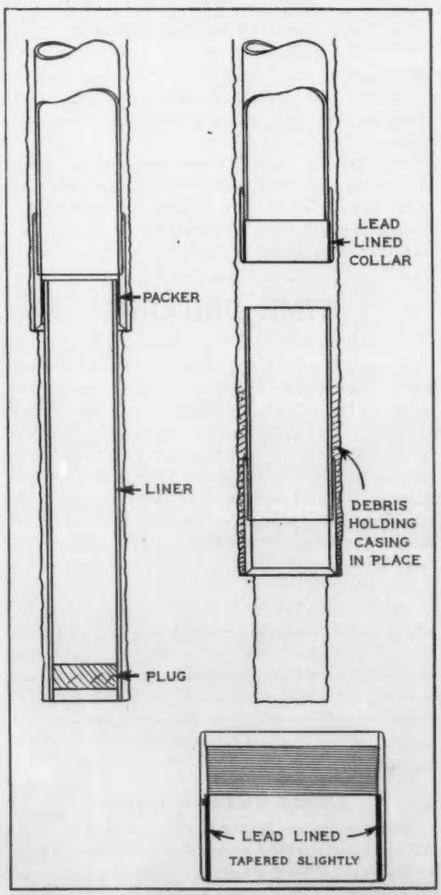

Fig. 3—(Left) Liner for vacuum wells. Fig. 4—(Right) Lead lined collar for connecting casing in hole

Source of Water

If the source of the water cannot be determined from a study of records the only expedient is to test the well for water from various sources. If the condition of the well permits testing the casing with casing testers this should be done first. If the casing is found to be tight the next step is to investigate other sources from which water may be escaping into the well. Starting at the bottom of the hole and plugging by stages will eliminate the various sources of water. First bottom water is shut off, if present; next water in the bottom of the sand; then water from sand between the casing shoe and the oil sand; and, finally, leaks around the casing shoe. In work of this sort a bailing or production test should be made after each new plug has been placed and the production of the well gauged in order to ascertain the exact result of the work.

A swab bailer or casing tester (Figure 2) may be made from a short section of pipe of lesser diameter than the inside of the casing. This is sealed at the bottom and fitted at the top with a pair of common flanges. A gasket is cut to fit snugly inside the casing as shown. The tester is run on the bottom of a bailer. At it is lowered into the well which has first been bailed down as far as possible, the water running through the casing will be caught in the tester because the tight fitting gasket will prevent it from running down into the well. As it is best to conduct such a test in the hole that can be bailed down and will not fill up again very rapidly this type of test has its limitations. But if the water is not flowing into the well too fast the tester can be run in and allowed to set for a short time at different levels from the bottom of the casing upward and when the tester is pulled out free of water it is known approximately where the leak is located. A test or two at this approximate depth will soon locate the position of the leak.

If the well fills with water too rapidly to permit using the casing tester the plugging method should

be used. Sometimes the well can be plugged with cement from the bottom, or with sand or brick capped with cement, but if the hole is to be plugged more than 30 or 40 feet up from the bottom it is usually desirable to bridge about 10 feet below the show and plug up into the casing, capping the bridge with cement. This procedure eliminates the work of building up a long plug and the trouble of drilling out the plug later.

When a well is plugged or bridged for a test, the plug or bridge may be built of almost any material available, such as sand, gravel, rocks, brick and chunks of broken-up cement. Sand is desirable material for extending a plug or a bridge, as it can be bailed or washed out easily. Any of these materials may be capped with cement. In fact, it is well to cement from a few feet below the shoe up into the casing, for should the casing be tight the cement can be drilled out of the pipe to about 1 foot below the shoe and a test made to determine whether water is passing around the shoe.

Methods of Repair

After the leak has been located it is next necessary to devise ways of making repairs. First the type well must be considered for it is not possible to apply the same repair methods to wells on a vacuum as to wells being repressured. If water, mud or cement is allowed to enter a well under vacuum the fluid will be promptly sucked back into the porest of the formation and they will be plugged.

If there is no leak around the bottom of the shoe it is possible to retain vacuum on a well to be repaired by running a liner with packer. (Figure 3.) The liner should be set on the bottom of the hole and preferably sealed at the bottom and equipped with packer to make tight fit on the inside of the casing at the top of the liner. With the lower part of the casing holding it is then possible to run into the hole and cut the casing at some point below the bad section and pull it out and rerun after checking for all leaks or corroded joints.

One way to rerun the casing and make connection with the lower portion left in the well is to secure a heavy collar (Figure 4) and have the lower half turned out and filled with lead and then finished so that the lead will make a drive fit over the end of the pipe in the hole. This special collar is screwed on the bottom of the string to rerun and is carefully set down over the pipe in the hole and the weight of the string of casing will cause it to be forced down over the upper end of the section of pipe left in the hole and in this way make a tight joint.

If the leak is around the bottom of the shoe it is probable the entire string of casing can be pulled and a new seat prepared. Or it is possible to bridge just below the seat and run in cement and then lower the casing into the cement and allow it to set and make a tight shutoff.

For repair work of this kind oil well cement is used and mixed with clear water to a consistence that will permit of its being handled in dump bailer, or in a pump if available. From 40 to 45 pounds (5 to 5½ gallons) of water per sack of cement which weighs about 95 pounds will give about the right thickness to the mixture. This cement can be placed with dump bailer or it can be run into the hole through a string of tubing.

Set in Smaller Casing

Another way to repair old casing is to set with packers enough smaller diameter casing inside of the flow string to extend for some distance below and above the place where the leak occurs. (Figure 5.) For instance in 6⅝-inch casing it is possible to set some 4¾-inch pipe with packers and in this way keep water from escaping into the inside of the well. However, such repairs are at best temporary and it is better to pull and rerun the old string or if this cannot be done to run an entirely new string of small casing inside of the defective casing and in this way make a real repair job. The

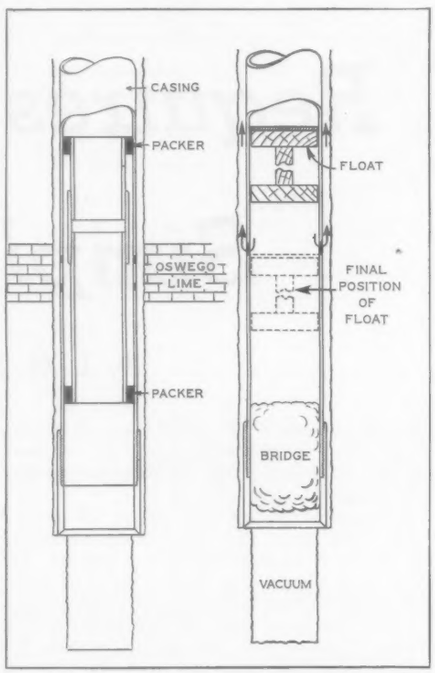

Fig. 5—(Left) Liner set with packers inside of casing. Fig. 6—(Right) Plug method of cementing behind casing

main trouble with such a method is cost for the old wells will not pay out fast enough to return the price of the new string of casing in a reasonable time.

The matter of cost is one thing always facing the owners of these old producers for there are many modern methods that might well be applied to repairs of old wells but they cost too much to permit of their economical use.

TIME DRILLING

(Continued from Page 39)

was begun above the estimated top of the Holloway sand, and cuttings were taken regularly at 5-foot intervals for a check. The top of the Holloway was clearly shown by the hard cap rock at 5,794-98 feet. When 5,811 feet was reached, according to driller's measurements, the Holloway sand was definitely determined, and a core was taken. During the trip a steel-line measurement was made, and the total depth was corrected from 5,811 feet to 5,795 feet. This accounts for the depth correction at that point.

A new core bit cut the time considerably, and while the data during coring is not comparable with drilling time above, the timing of the core correlates exactly with the core recovery of sand and the underlying shales. The Holloway sand, corrected by the steel-line measurement, was recorded at 5,779-5,808 feet, closely checking the Schlumberger record which was later taken.

Coring the Lower Marine

Some operators prefer to take cores in both the "D" sand and the Bodcaw sand of the Lower Marine or Cotton Valley formation. An example of the correlation of time drilling and subsequent Schlumberger survey is shown in Figure 2. As noted before, the sands in this formation drill harder than the other sections. This is illustrated by the increased time required to drill through the small "B" sand at 8,300-06 feet, with the shale break clearly shown on the porosity curve of the electrical log, and the time break in the drilling chart.

The tight sand section which marked the "C" sand of the series likewise is easily picked up on the time drilling chart. This correlation gave operators a good indication of where to begin coring in the "D" sand. In this case, as often happens, the hard cap rock was missing, and the time data did not indicate the beginning of the body.

Top of Bodcaw

On the other hand, the top of the Bodcaw sand, a hard sandy lime cap, checks exactly with the correlation on the Schlumberger, enabling the driller to begin coring in the top of the section. The check between drilling depth and electrical logging depth in this case is unusually close considering the depth of the hole. An error of several feet between the two is to be expected in most areas.

In some instances the Bodcaw sand and the sand stringers lying above it are not cored. The principal aim, then, is to make certain that the hole is carried through the Bobcaw sand so that the entire body will be logged in the Schlumberger survey. Careful time drilling and examination of cuttings will allow the operator to safely drill the sand without resorting to the taking of cores.

Common practice, where no coring is to be done, is to estimate the top of the Bodcaw sand as closely as possible from subsurface data in sourrounding wells. Allowing for the usual intervals and thickness of the sand stringers above the pay, timing is begun about 135 feet above the estimated top. This makes it possible to pick up the "C" and "D" sands, and thus better tie down the main section.

When this is followed, cuttings are taken every 5 feet in the upper section of the series, but when the driller has reached about the last 5 feet of the Bodcaw sand, cuttings are then caught every foot. The timing, together with the closer check, indicate accurately the base of the sand. As an added precaution, 10 feet is usually drilled below the base of the sand as determined by the time data.

The base of the Bodcaw, as shown in Figure 3, is a hard sandy lime which drills harder than the sand itself and provides a good marker for the driller. In this well the porous zones in the "C," "D" and Bodcaw sands can be recognized by their relative softness in comparison with the tighter sand in the three sections.

Timing Limitations

The variable hardness of the formations drilled in the Travis Peak and Lower Marine at Cotton Valley limit to some extent the reliance on time drilling as an index of the type of section drilled. Casing seats and perforating points are therefore determined by coring and Schlumberger surveys.

In addition, the changing of bits exerts a marked effect on the drilling time. Variations in the rotary speed, weight on the bit, viscosity and gravity of the mud, pump pressure and number of lines used, all detract from comparable results in various depths of the same well and in corresponding depths of different tests.

The factors which influence drilling speed are held as constant as it is feasible to maintain them. Each individual driller, however, has a certain combination of speed, points, etc., to which he is accustomed. The data on timing which is being gathered in the field has an added value in allowing comparison of drilling efficiency between these various combinations of conditions.

Acknowledgment: Information for this paper was obtained through the cooperation of geologists and engineers with the following companies: A. G. Oliphant, Ohio Oil Co., Hunt Oil Co. and Magnolia Petroleum Co.

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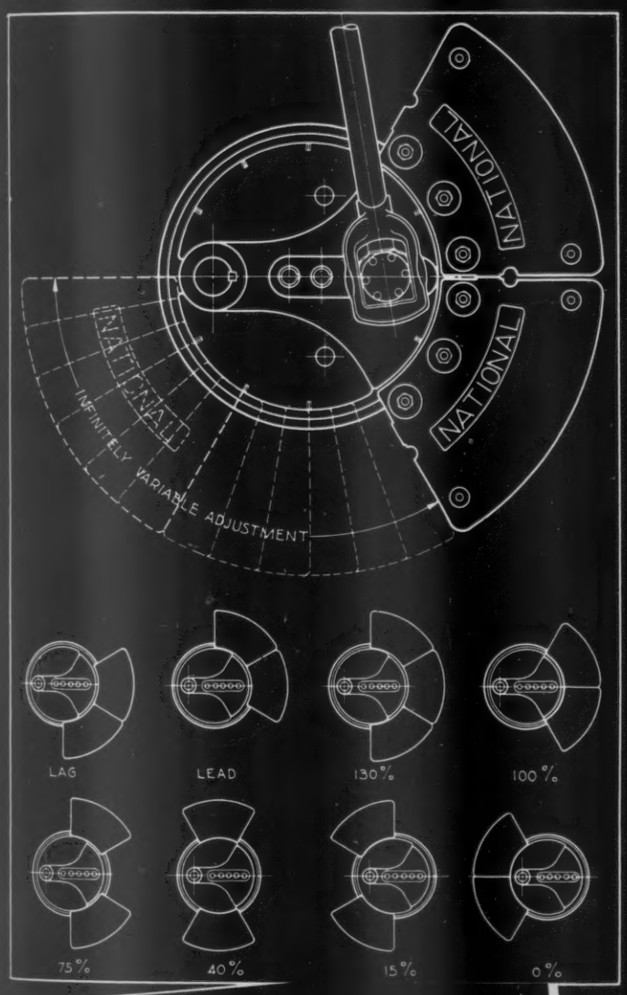

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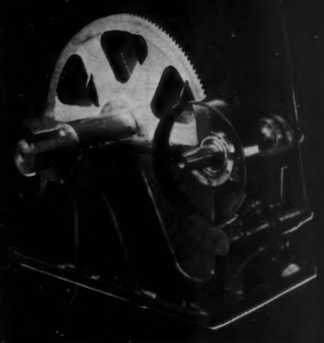

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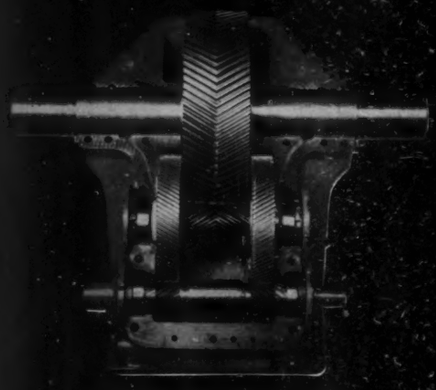

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Evaluating Oil Stocks by Gravity Curves

By W. L. NELSON

In the design of refinery equipment and the estimation of construction costs, the designer can seldom obtain the exact physical properties of the stocks which he must produce and hence he must frequently resort to averaging and the use of property curves. The two common types of curves have been designated by engineers as "mid-per cent" curves and "yield" curves. Both of these curves may be applied to the same property and the purpose of the study presented here is to check these two types of curves against one another. Although the theory underlying the construction and use of these two types of curves has been known for many years, few if any, checks on the theory have been published.

For this purpose, a series of fractions were obtained[1] by a true boiling-point distillation of a benzene type stock extending through gasoline and kerosene. The gravity of each fraction was determined and also the gravities of a number of blends or mixtures of fractions. The fractions and blends, and their gravities are shown in Table 1. Computed gravities of the blended fractions are also shown for comparison.

One method of analyzing gravity data is to plot the gravities of each fraction at the mid-percentage point of the fraction. This method may be followed if the change in gravity from fraction to fraction is small. In case the fractions are not of narrow boiling range, it is necessary to plot the curve by drawing horizontal lines such as those indicated in Figure 1. In constructing the gravity curve through a series of such horizontal lines, the triangular areas bounded by the line and the curve, are balanced against one another so that the area above the line is equal to the area below the line. In Figure 1, only a few of such lines are shown although all of the data can be plotted in such a manner.

The experimental gravity determinations reported here were checked against one another by actually blending a number of wide boiling range fractions. All of the fractions from Nos. 29 to 49 were blended in the laboratory and the gravities of these blended fractions were compared with

[1]Advanced Refining Laboratory—University of Tulsa.

TABLE 1—FRACTIONS AND CORRESPONDING GRAVITIES

No.	Percentage range	Fraction obtained by		A.P.I. gravity at 60° F. Experimental	Computed
1	0- 3.3	Distillation		74.8	...
2	3.3- 6.7	Distillation		62.5	...
3	6.7- 10.0	Distillation		59.4	...
4	10.0- 13.3	Distillation		56.3	...
5	13.3- 16.7	Distillation		54.0	...
6	16.7- 20.0	Distillation		52.2	...
7	20.0- 23.3	Distillation		50.6	...
8	23.3- 26.7	Distillation		49.7	...
9	26.7- 30.0	Distillation		48.7	...
10	30.0- 33.3	Distillation		48.1	...
11	33.3- 36.7	Distillation		47.6	...
12	36.7- 40.0	Distillation		47.2	...
13	40.0- 43.3	Distillation		46.9	...
14	43.3- 46.7	Distillation		46.1	...
15	46.7- 50.0	Distillation		45.6	...
16	50.0- 53.3	Distillation		45.0	...
17	53.3- 56.7	Distillation		44.5	...
18	56.7- 60.0	Distillation		44.1	...
19	60.0- 63.3	Distillation		44.0	...
20	63.3- 66.7	Distillation		43.9	...
21	66.7- 70.0	Distillation		43.6	...
22	70.0- 73.3	Distillation		43.1	...
23	73.3- 76.7	Distillation		42.9	...
24	76.7- 80.0	Distillation		42.1	...
25	80.0- 83.3	Distillation		41.8	...
26	83.3- 86.7	Distillation		41.2	...
27	86.7- 90.0	Distillation		40.5	...
28	90.0-100.0	Distillation		38.2	...
29	0- 10.0	Blend of fractions	1- 3	65.2	65.3
30	0- 26.7	Blend of fractions	1- 8	56.9	57.4
31	0- 50.0	Blend of fractions	1-15	52.8	52.6
32	0- 70.0	Blend of fractions	1-21	49.6	50.2
33	0- 90.0	Blend of fractions	1-27	47.7	48.4
34	20.0- 30.0	Blend of fractions	7- 9	49.6	49.7
35	20.0- 50.0	Blend of fractions	7-15	47.7	47.8
36	20.0- 70.0	Blend of fractions	7-21	46.4	46.4
37	20.0- 90.0	Blend of fractions	7-27	44.9	45.1
38	30.0- 43.3	Blend of fractions	10-13	47.2	47.4
39	30.0- 60.0	Blend of fractions	10-18	46.0	46.1
40	30.0- 80.0	Blend of fractions	10-24	44.8	45.0
41	80.0-100.0	Blend of fractions	25-28	39.9	39.7
42	70.0-100.0	Blend of fractions	22-28	40.9	40.7
43	60.0-100.0	Blend of fractions	19-28	41.5	41.5
44	50.0-100.0	Blend of fractions	16-28	42.3	42.1
45	40.0-100.0	Blend of fractions	13-28	42.8	42.8
46	30.0-100.0	Blend of fractions	10-28	43.5	43.5
47	20.0-100.0	Blend of fractions	7-28	44.3	44.2
48	10.0-100.0	Blend of fractions	4-28	45.3	45.3
49	0-100.0	Blend of fractions	1-28	47.0	47.4
..	0-100.0	Original sample	....	47.1	47.4

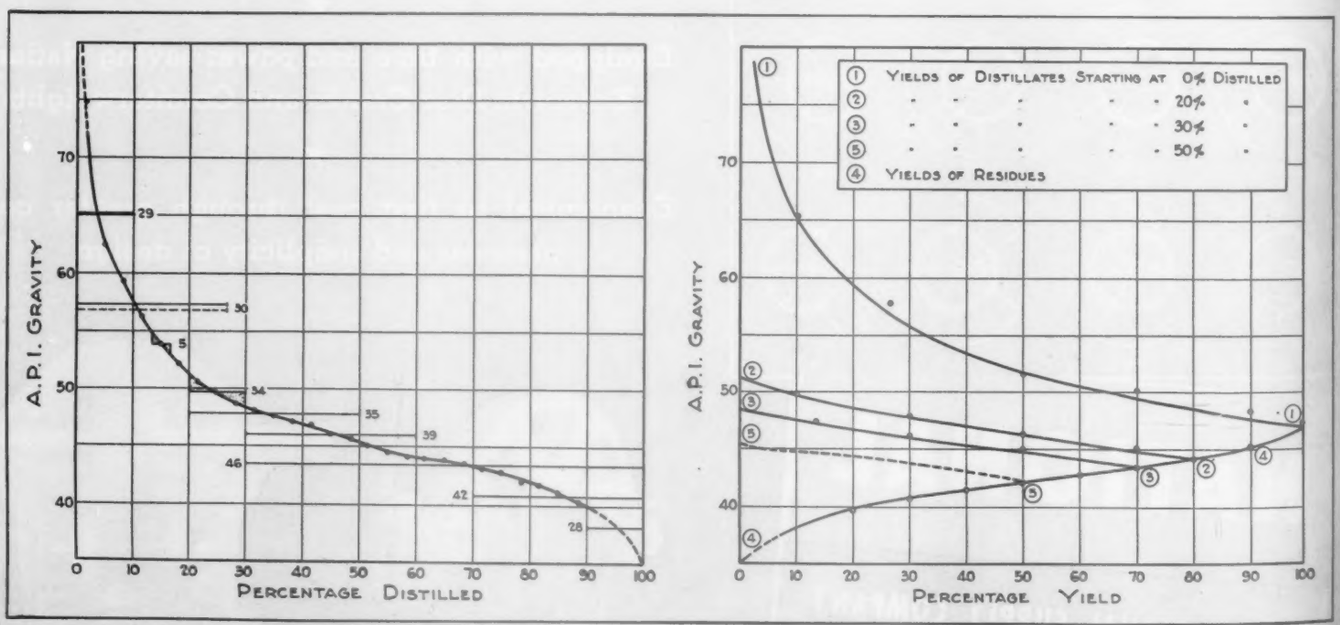

Fig. 1—Gravity plotted against per cent distilled

Fig. 2—Relationship between gravity and yields

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the gravities of similar fractions which were read from the mid per cent curve. In other words, the 28 primary fractions were used to construct the gravity mid per cent curve as shown by the circle points in Figure 1. As an example: The gravity of a fraction extending from 20 to 50 per cent was determined by drawing the horizontal line marked 35 on Figure 1. From the gravity mid-per cent curve such a fraction has a gravity of 49.7 A.P.I. whereas the actual material between 20 and 50 per cent, represented by Fraction 35 had a gravity of 49.6. Other comparisons of this nature are indicated in the last column of Table 1. The gravities of the wide boiling range fractions can also be computed arithmetically by taking the average of the gravities of the several fractions that are involved if such data are available. However, if only the curve is available, the graphical method of balancing areas, as practiced in this study, must be employed.

The computed values given in Table 1, all seem to be within the experimental accuracy of the laboratory procedure used. The greatest inaccuracy appears in those blends which involve the low-boiling fraction such as Nos. 1 to 8. It is possible that parts of these fractions were lost during mixing. In spite of these discrepancies, it is apparent that the general method of constructing and using gravity mid-per cent curves is theoretically sound. Greater accuracy may be attained by using specific gravity rather than A.P.I. gravity.

Yield curves differ from mid-per cent curves because they tell the total percentage of a wide fraction of given gravity that can be produced. Thus, Fractions 29 to 33 can be plotted as a curve of yield against gravity for materials which extend from zero per cent to any yield up to a yield of 100 per cent, or all of the sample. These data are labeled in Figure 2 as Curve 1. Likewise, Fractions 29, and 41 to 49, constitute a yield curve of the gravity of the residues that remain at any percentage distilled. Thus, four different yield curves are possible from the experimental data presented herewith:

Curve 1—Yield of total distillate versus gravity of distillate (Fractions 1, 29 to 33 and also the original sample).

Curve 2—Yield of distillate starting at 20 per cent versus gravity of these distillates (Fractions 7, 34 to 37, and 47).

Curve 3—Yield of distillate starting at 30 per cent versus gravity of these distillates (Fractions 10, 38 to 40, and 46).

Curve 4—Yield of residue versus gravity of residue (Fractions 41 to 49, and 28).

Curve 5—Computed yield curve for distillates starting at 50 per cent.

The data were again checked by plotting the computed gravities as circle points. Finally Curve 5 was computed by using the mid-per cent curve or by balancing triangular areas starting at 50 per cent.

Conclusion

From the experimental data presented here, it appears that the mid-per cent curve can be computed from yield curves with reasonable accuracy and vice versa. Other properties such as viscosity and color (on the common color scales) are not additive properties such as gravity, and hence the study presented here will not apply directly to such properties. Although experimental studies should be made regarding other properties such as octane number and molecular weight, to verify their behavior, it is probable that they will behave in much the same manner as gravity.

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Under date of March 23 the Division of Trade Standards of the Department of Commerce sent out commercial standards for insecticides and disinfectants for written acceptance. Favorable returns have been received representing a satisfactory majority of production and the commercial standards designated as follows are effective as of June 10, 1938:

Liquid Hypochlorite Disinfectant, CS68-38.

Pine Oil Disinfectant, CS69-38.

Coal Tar Disinfectant (Emulsifying Type), CS70-38.

Cresylic Disinfectants, CS71-38.

Household Insecticide (Liquid Spray Type), CS72-38.

Mimeographed copies of these commercial standards are now avaible and will be supplied gratis to those who request them from the department in Washington, D. C.

Philippine Petroleum Law Awaits Legislative Act

No petroleum law has yet been enacted by the Philippine assembly. Socony-Vacuum Oil Co. agreed to do certain development work in the islands and its contract was approved by the Philippine president, but has yet to be approved by an act of the legislature. This bill was not presented at the last session because of an opposition element which appeared quite strong and it probably was guided, to some extent at least, by the Mexican situation.

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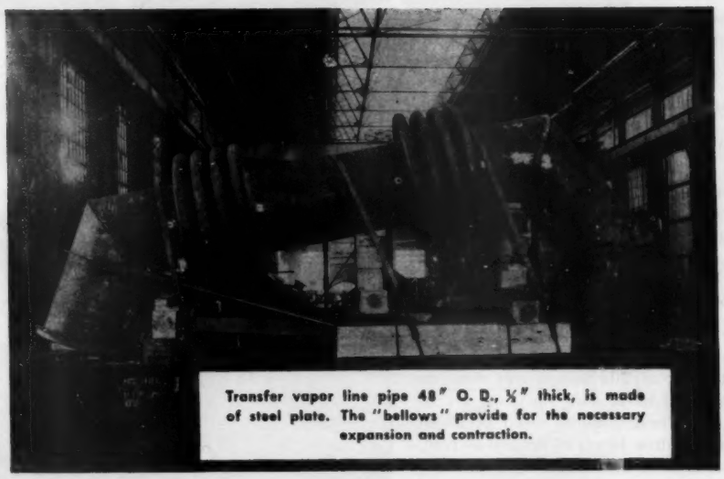

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Typical Failures of Still Tubes in Refineries

By E. C. WRIGHT
and H. HABART
National Tube Co.*

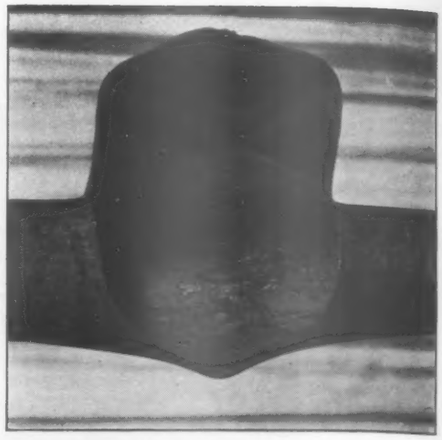

Fig. 1—Typical example of early failures of tubes used in cracking plant operations

Cracking still tubes have been used for approximately 20 years. The first cracking coils using high pressure were constructed by C. P. Dubbs during the World War. Originally, cold-drawn carbon steel tubes were used exclusively, but these have been largely displaced during the last 10 years by a variety of alloy steels of which there are now at least 20 different types. The National Tube Co. was among the first to make cracking still tubes and has been intimately connected with the industry during this whole period. In this interval, hundreds of ruptured still tubes have been examined in our laboratories, and these failures discussed with refinery engineers. This paper consists of a summary of the many metallurgical autopsies which have been performed in the last 20 years. A survey of these investigations show that the failures fall into definite classes.

Early Work

The earliest work of this nature was done on specimens which had burst wide open for a considerable distance. These failures often occurred after only a few hundred hours of service as compared to a life of several thousand hours, which is now expected of cracking still tubes. The only material then in use was low carbon boiler steel, and the sizes of the tubes were usually estimated from the properties of the steel at room temperature. As no boilers had then been built for temperatures above 600° F., the design of equipment for 850° F. and higher was very largely guesswork. Little or nothing was known of the strength of materials at high temperature, and the characteristic of flowing or creeping of metals had hardly been recognized. As a result, tubes were operated under conditions far beyond their capacity and burst wide open when failure occurred.

Figure 1 is a typical example of the type of rupture which was early encountered. The tube in Figure 1 had only been in service for 12 days and had apparently been overheated throughout its brief service life. Metallurgical examination of this type of tube invariably develops structures similar to those observed in examination of broken tensile test pieces on tests made on short-time high-temperature tests. Sections cut from the metal adjacent to the rupture invariably show directional flow lines of work, and it is believed that this kind of failure is practically the same thing as the short-time high-temperature bursting test. A tube will ordinarily expand approximately 25 per cent of its diameter before failing in a bursting test, and the order of expansion on this kind of failure is similar. It is interesting to note that tubes rupturing in this manner have rapidly disappeared in cracking coils during the last five or 10 years.

In the early days, the quality of tubes manufactured and the inspection standards were also far from perfect, and occasional cases of definitely defective tubes were encountered. Overfills or laps are produced in rolling seamless tubes when the pierced billet, entering the rolling mill, is too large in diameter for the rolling mill groove. Under these conditions, the metal shears in the pass or laps over. Such a defect in a still tube offers a path for oxidation for the furnace gases, which gradually deepens with service. This finally develops in the form of a notch, which accelerates the failure of the tube. A tube with such a defect may often fail with little expansion. This type of condition is also extremely rare now in cracking tubes, due to the fact that they receive such careful inspection at the plants making furnace tubes.

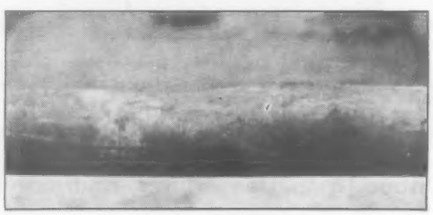

Fig. 2—Five-inch O.D. tube expanded to 5.722 inches by conditions duplicating actual service conditions when used in a refinery

Another type of failure, which seems to be largely mechanical, is indicated by that shown in Figure 2. This represents an original 5-inch O.D. tube which has expanded in a series of bulges along a length of 6 feet. Although this tube did not open up, it is very near the rupture point at one position, where the outside diameter is 5.722 inches. This condition can be developed either by creep in a long time of service or it has also been produced by severe turbining of the tubes after shutdown when the tubes are too hot. Tests of this feature were actually conducted at one refinery where tubes were heated to different temperatures and then turbined. It was found that at temperatures above 600° F. the turbining of the tubes caused localized bulging, particularly when the turbining tool was left in one position for too long a time.

Tube Overheating

Serious cases of overheating of the tube metal are still evident, although this factor is also decreasing from better control of furnace operations. Figure 3 shows the metal structure adjacent to the rupture of a tube which was heated to a very high temperature. The coarse austenitic grain size of this metal is readily apparent as compared with the structure of the metal from the same tube at a point 180 degrees around the tube from the rupture. Figure 4 shows the structure at this point and typifies the fine grain metal of the original tube which has undergone little transformation. The investigator never knows whether the structure exhibited in Figure 3 represents that of the tube before rupture or the structure developed from overheating from the fires which usually result when a still tube blows out. Figure 5 shows several failed tubes, whose structure was also found to be overheated.

Intercrystalline Cracking

During the past two or three years there has been considerable discussion of a possibility of failure of metals at high temperatures through intercrystalline cracking, due either to oxidation or corrosion of grain boundaries. In all of these studies, extending over 20 years, only one instance of this type of failure has been encountered in steels of the ferritic type. This includes all of the low carbon, carbon-molybdenum, and alloy steels containing 1 to 5 per cent chromium. The case observed represents a carbon steel still tube taken from a refinery in West Texas which had been processing in extremely corrosive high sulfur crude. The inside surface of this tube was honeycombed with innumerable intergranular fissures. Examination of the metal in the microscope ex-

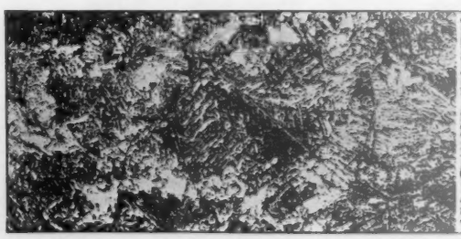

Fig. 3—Metal structure adjacent to rupture after heating tube to high temperature

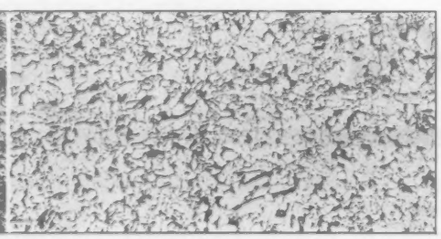

Fig. 4—Metal structure of same tube 180 degrees around the tube from the rupture

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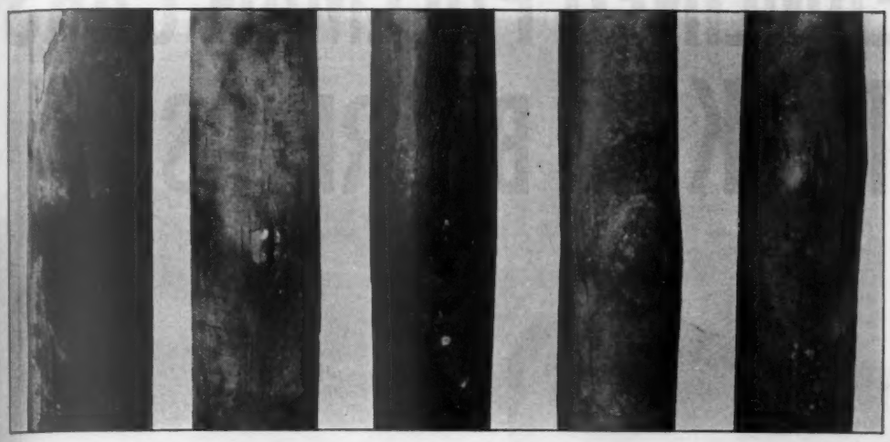

Fig. 5—Typical tube failures due to overheating of metal

hibited typical structures associated with intergranular corrosion. Intergranular corrosion on the inside of a ferritic steel tube had never been encountered before except where hydrogen gas was present in considerable volume, such as is encountered in ammonia synthesis plants.

Intergranular Failures

Two investigations reported during the past year have raised considerable anxiety among engineers regarding the intergranular failure of ferritic steels when under stress at high temperatures. In all of our studies of boiler tubes, superheater tubes, cracking still tubes, and tubes in high-pressure chemical plant service, instances of intergranular failure of ferritic steels have been extremely rare except in the presence of hydrogen. In a paper[1] entitled "Creep and Engineering Design" R. W. Bailey stated: "Appreciable weakening of the steel may occur in time, and evidence shows that probably all low alloy high creep resistant steels fail under creep conditions by intercrystalline cracking with comparatively low ductility." He further stated " . . . total creep should not exceed 0.005 strain for high creep resistant steels containing molybdenum."

These remarks were apparently based on creep-to-fracture tests made at 1,020° F. on a carbon molybdenum steel at the National Physical Laboratory. The stresses employed were 20,000 to 34,000 PSI, a range far above that normally used for this steel in creep testing or in working stresses in equipment designed to work at this temperature. When tested at these high stresses at 1,020° F., the specimens showed early intergranular failure with comparatively low ductility. The corresponding creep rates were abnormally high (20 per cent to 4,000 per cent per 10,000 hours).

Papers by Clark and White,[2] and White, Clark and Wilson[3] present similar examples of intergranular failure in ferritic steels. A sample of S.A.E.-1,015 steel tested at 1,000° F. at stresses of 12,000, 9,000 and 6,000 PSI exhibited intercrystalline fractures in periods of 1,552 hours, 4,788.5 hours, and 13,950.75 hours respectively. A reasonable creep limit for this steel at 1,000° F. is about 3,000 PSI for 1 per cent elongation in 10,000 hours (.1 per cent per 1,000 hours or .0001 per cent per hour). The loads described in these papers are 4, 3, and 2 times the creep limit. In the case of the 6,000 PSI stress, the specimen apparently behaved normally for some 10,000 hours, after which the rate of straining or creep increased enormously. Similar cases of intergranular failure were reported in the paper on "The Rupture Strength of Steels," where the rate of straining was well above that observed in ordinary creep tests.

It is significant that these intercrystalline failures are almost never encountered in ruptured still tubes, even after periods of 30,000 hours. It is also reported that intercrystalline failure does not occur in creep tests where the stress or rate of straining is near the limiting creep load as usually defined. There are no known instances where tubes have been designed to operate at stresses high enough to produce intercrystalline fracture. Even in severe cases of overheating, where the operating temperature is such that rapid rates of straining should occur, the tubes do not fail except by a normal transcrystalline fracture. The evidence that intergranular failure of ferritic steels is common at high stresses is of great importance and points more emphatically to the fact that stresses chosen for pressure tubes should be such as will produce low rate of creep.

Carbon Steel Tubes

The foregoing examples were selected from carbon steel still tubes and give some indication of the wide variety of structures which are developed in these tubes under still tube operating conditions. It will be impossible to indicate all of the peculiar changes which do occur. It has become evident, however, that the original structure of carbon steel gradually and definitely changes to that of an equilibrium state, due to its long time exposure to high temperatures. The original structure of the tube metal is practically always that of the normalized condition, as shown in Figure 6. Constituents of this structure are ferrite and lamellar pearlite. If the metal is held at temperature, the carbides in the lamellar pearlite gradually coalesce into a globular or spheroidized state as shown in Figure 7. However, if the time at temperature is long enough, the round carbide particles coalesce into larger carbide particles and finally decompose into graphite. The structure of the original low carbon steel becomes similar to that of malleable iron containing a very small amount of carbon in the form of graphite. Figure 8 shows small spots of graphite in the carbon steel tube which had been in service for approximately 6,000 hours with an observed tube metal temperature of at least 1,100° F. Figure 9 is taken at 500 diameters from the metal shown in Figure 8 and shows a distinct graphite particle, adjacent to undecomposed carbides, inside the ferrite grain. The physical properties of the metal in these conditions also undergo changes as shown in Table 1.

TABLE 1—PHYSICAL PROPERTIES OF METALS

	Yield point	Tensile strength	% Elongation in 2"
Normalized	30,000	52,000	42.0
Spheroidized	27,000	47,800	40.0
Graphitized	22,000	39,000	21.0

The low carbon steels with one-half per cent and 1 per cent molybdenum are also subject to structural changes almost the same as those observed in plain low carbon steel, although graphite has never yet been encountered in the molybdenum bearing steels. The chromium alloys, containing from 2 to 5 per cent chromium, seem to have much more stable structures, although, even in these materials, some coalescence and enlargement of carbide particles takes place, and some softening of the properties is noted after long periods at high temperatures.

Fig. 6—Normal structure of carbon steel tube before heating for long periods

Fig. 7—Structure of carbon steel after heating for long periods

Even more remarkable instances of this graphite formation have been reported by Dr. R. W. Moore of the general laboratories of the Socony-Vaccum Oil Co. In this case, carbon steel tubes with a service life history of 20,000 to 45,000 hours were investigated. This long service for carbon steel in cracking coils is greatly beyond that reported by any other refinery of the writers' knowl-

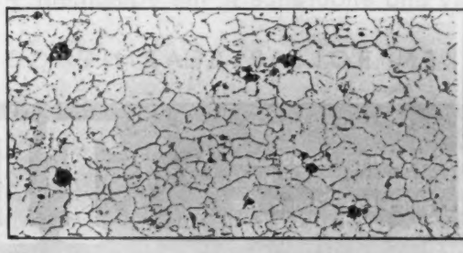

Fig. 8—Spots of graphite in carbon steel tube

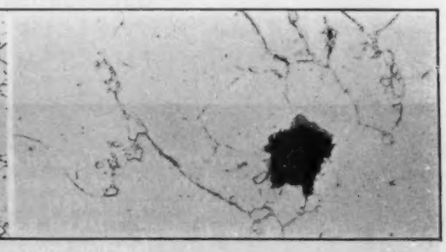

Fig. 9—Graphite particle taken at 500 diameters from metal shown in Fig. 8

[1] "Creep and Engineering Design," by R. W. Bailey, International Association for Testing Materials, in April, 1937.

[2] "Creep Characteristic of Metals" Transactions A.S.M. 1936.

[3] "Rupture Strength of Steels at Elevated Temperatures." Transactions A.S.M. 1937.

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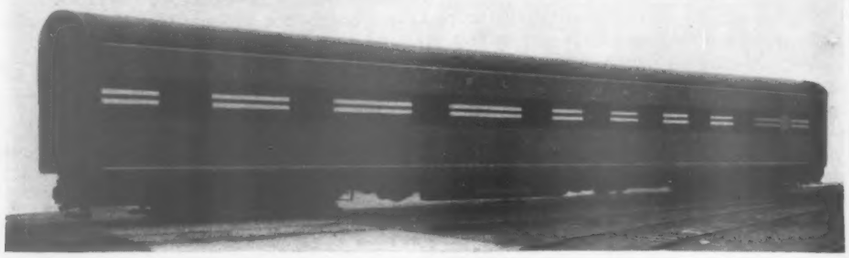

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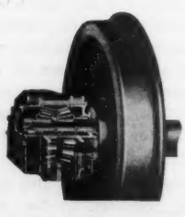

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edge, as the usual life of a carbon steel tube, depending upon corrosion conditions, seems to be between 2,000 and 15,000 hours. In the extremely long service life investigated by Doctor Moore, the presence of graphite in a number of tubes was well

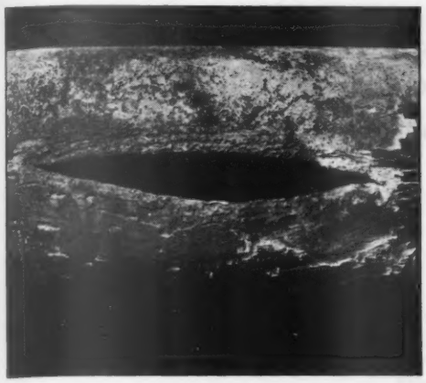

Fig. 10—Type of rupture common among alloyed tubes

established. In this case, the different sections of the same tube, which had apparently operated with a thermal gradient, showed all degrees of spheroidization to final graphite formation. These data are interesting, in that they show the trend of the structure of the steel in cracking still service.

The structural transformations, evident in Figures 6, 7, and 8, require quite high temperatures, apparently at least 1,000° F. The time and temperature seem to be the main contributing causes, and the effect of stress is somewhat negligible. Specimens of steels heated to 1,000° F. without stress seem to change in structure very slowly, and it may take several thousand hours to completely spheroidize the original lamellar pearlite at this temperature. The transformation can be promoted much more rapidly at 1,100° F. At 1,200° F. a complete change to spheroidized carbides can be produced in 100 hours without the application of any stress. In practically all of the still tube failures examined, the original metal structure has always been changed to the spheroidized state. The only difference between the various tubes is in the size of the carbide particles noted. This makes it evident that still tubes which have ruptured have very probably been operating at metal temperatures considerably above 1,000° F. In present day cracking furnaces, the optimum outlet oil temperature is 1,050° F., and the metal temperature of the tube must be considerably higher than this, especially in the last row of tubes where the oil stream is hottest. If the tube has any deposit of coke, which has a high insulating effect, the metal temperature of the tube must approach 1,150° to 1,200°, and at these metal temperatures the stress capacities of the steels are quite low. It is believed that tubes in the outlet section of the coil should be designed to offset this condition either by the use of heavier wall thicknesses or alloys of greater creep strength, and this feature has lately been given consideration.

Figure 10 shows a more recent rupture of a 5 per cent chromium, one-half per cent molybdenum tube, and is generally typical of the type of failure most commonly encountered now on all forms of cracking still tubes. It will be noted that this tube is heavily scaled, the oxide coating on the outside being at least one-sixteenth inch thick,

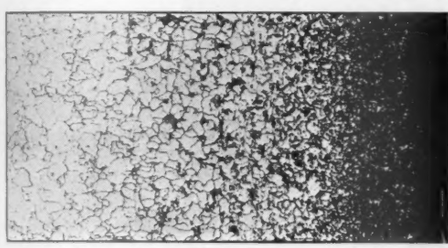

Fig. 12—Carburization of inside surface of tube shown in Fig. 11
Magnification 100 times

Fig. 13—Refined structure of metal adjacent to fracture
Magnification 100 times

and that the scale is permeated with longitudinal fissures or cracks which lead into the metal rupture. It is believed this condition, which is now most frequent in tube failures, represents a combination of oxidation and creep failure. It has been generally noted that such heavily scaled tubes develop cracks in the scale, and the oxidation of the metal in these scale cracks becomes accelerated at the base of the crack. This develops a slight notch, and, as the tube expands slightly due to creep, the notch is opened and deepened by further oxidation. The tube wall usually thins out on one side, which is probably hotter in the still, and the hottest metal creeps to the greatest extent. This is a gradual type of failure, which does not develop into a sudden rupture, and often ends up with just a small pin hole leak or crack sometimes less than 1 inch long. The expansion of the tube is often less than 10 per cent of the original diameter, and this reduced expansion is believed to be associated with the continual oxidation of the scale notch, which is first produced in the original cracking of the scale. This type of failure is stressed, as during the past five years it has represented most all of the tubes examined. Carbon steel tubes and steels of other compositions also seem to generally fail in a similar manner.

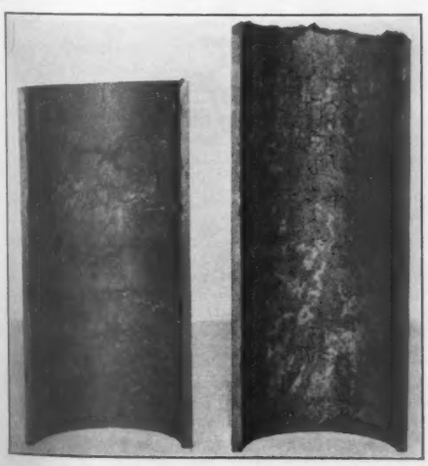

Fig. 14—Intercrystalline structure of metal inside alloy tubes

Another instance of a 5 per cent chromium, one-half per cent molybdenum tube failure of this type is shown in Figure 11. This section shows the wrinkled outside surface and the penetration of the scale notch into the tube wall. The tube shown in Figure 11 also exhibits some interesting metal structures, indicated by Figure 12 and Figure 13. Figure 12 shows distinct carburization of the inside surface of the tube, from which it is inferred

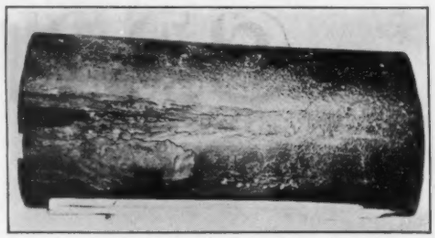

Fig. 11—Another specimen of alloy-tube failure

that the metal was heated in service to at least 1,500° under the heavy coke deposit. Figure 13 shows the refined worked structure of the metal adjacent to the fracture.

One of the most common causes of cracking tube failures is that due to corrosion, and numerous examples of failed tubes, which were badly corroded, have been studied. Unfortunately, tubes, failing from this source, rarely exhibit anything of interest from a metallurgical standpoint, and no photographs of structures of badly corroded tubes are included.

In the case of the 18-8 chromium-nickel alloys, definite instances of corrosive failure have been studied. These tubes under ordinary conditions are largely immune to corrosion on the inside from the oils being processed and also highly resistant to oxidation on the outside. Under certain conditions, such as structure, stress, and temperature, however, the 18-8 alloy has exhibited cases of intergranular failure originating on the inside from intergranular corrosion or on the outside from intergranular oxidation. Figure 14 shows half sections of 18-8 alloy tubes which had begun to fail on the inside, which, upon investigation, were found to be intercrystalline.

A definite case of external intercrystalline oxidation is shown in Figure 15. This shows the tube surface honeycombed with fine intercrystalline cracks. Figure 16, taken at 1,000 diameters, is of considerable interest in that it exhibits the metal of the path of the oxidizing gases. The white streak of metal between the two layers of oxide apparently represents the original grain boundary between these crystals, and the oxidation has taken place at the grain boundary surface of the original crystal where the chromium was depleted through carbide precipitation. The theory has long been

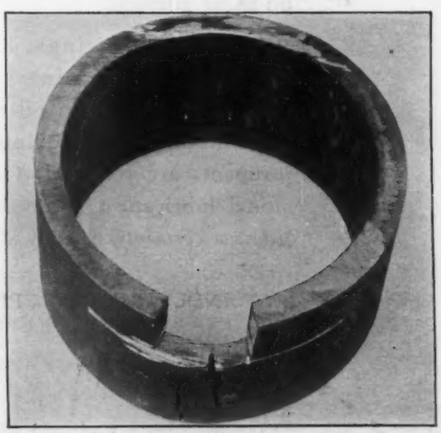

Fig. 15—External crystalline oxidation

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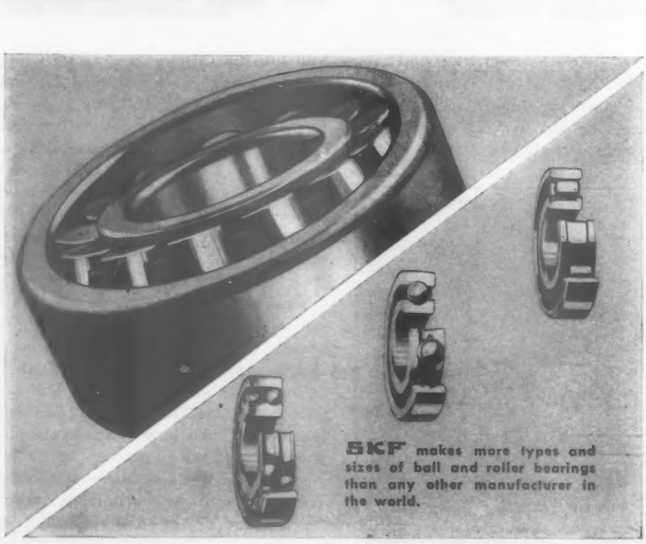

assumed that, when carbide precipitation occurs in chromium-nickel alloys, the separation of the chromium carbides, which are high in chromium, causes a reduction in chromium content in the grain boundary surface adjacent to the precipitate. This lower chromium content at the grain boundary reduces its corrosion resistance, and therefore, accelerates the attack of the corroding agent along the grain boundary.

Summary of Findings

This brief summary of accumulated investigations over the past 20 years has been compiled for the interest of refinery engineers using still tubes. In this period, great advances have been made in the design, operation, and control of cracking still plants, even though more severe conditions were gradually being imposed upon the equipment. It is now possible to process the most corrosive crudes and to conduct polymerization and reforming operations at temperatures and pressures which were unheard of 15 years ago. With these advances in the cracking art, the general average life of still tubes has also been greatly increased. Still tubes, which previously would not have lasted more than two to 10,000 hours, are now being used in service

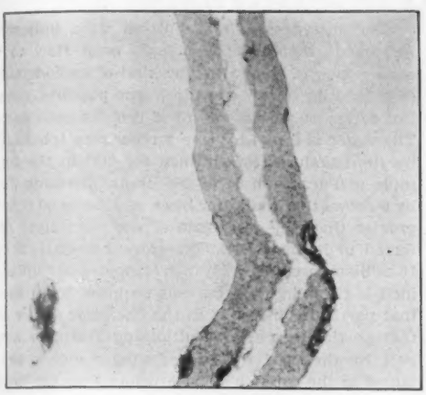

Fig. 16—Metal lining path of oxidizing gases Magnification 1,000 times

for periods of 30,000 to 60,000 hours. This has largely come about through improvement in tubes and tube metals, but more particularly to advances in design and in operating control of cracking still furnaces. In 99 per cent of the furnace tube failures which have been investigated, there have been no examples of really defective steel or poor workmanship in tube manufacture, and this has been particularly true during the past five or 10 years. There have been, however, very great improvements in the design and construction of cracking still furnaces, and much greater care in supervision in cleaning the tubes, gauging their wall thickness, and observing the coil for hot spots during operations.

It is believed that this long period of experience has proven the ability of the metals used to withstand extremely severe punishment. This experience indicates that a refinery operator, carefully regulating his cracking conditions, can use tubes selected from a variety of analyses with good assurance both for economical operation and good safety. The fact that cracking coils are now built to handle up to 40,000 bbls. per day of crude at pressures of at least 1,000 pounds and at outlet vapor temperatures as high as 1,050° F. is good proof that engineers can design with confidence from the tubular materials now available.

Many persons have contributed to this paper through work done during the past 20 years. The writers wish particularly to thank Dr. R. H. Aborn of the United States Steel Corp. Research Laboratory; Dr. R. W. Moore of the General Laboratories of Socony-Vacuum Oil Co., and Wayne Colmery, Metallographist, Ellwood Works, National Tube Co., who prepared many of the illustrations.

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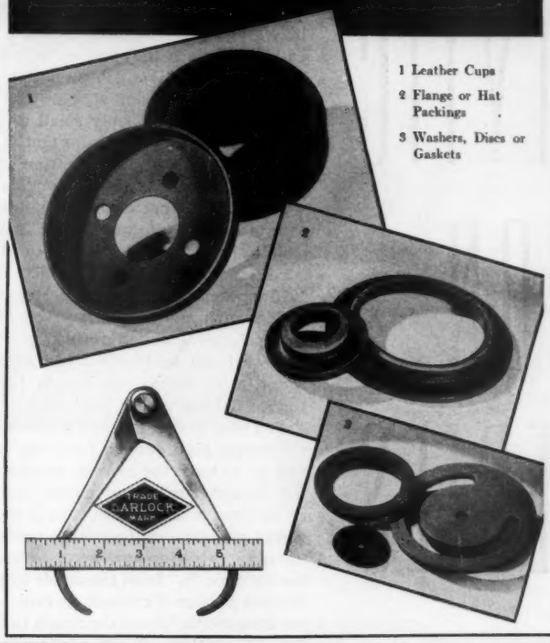

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CONTROLLING ELECTROLYTIC CORROSION IN REFINERIES

By R. N. Coffman

Second half of article prepared by R. N. Coffman to present modern means for preventing the excessive electrolytic corrosion of refinery equipment. In the first half, published in the June 30 issue starting on page 56 the author discussed the fundamentals of electrolysis while in this half the design and layout of cathodic protective systems is described.

In design work as well as in testing surveys, the first problem on hand is to determine how much electrical current must flow to 1 square inch of the cathode surface to adequately protect that 1 square inch from possible chemical action of the water, or electrolyte. A hypothetical case is outlined here.

Supposing that the metal to be protected is of the ordinary tank or pipe steel. Then tabulated data should be available that would give the minimum necessary current that must flow to 1 square inch of that particular metal in order to protect that 1 square inch of surface from an electrolyte of a certain resistance. This given electrolyte-resistance would have been ascertained with the same standard test as outlined for obtaining "O" in the formula of Paragraph 9. (The author is not aware of the existence of such data, as mentioned, tabulated for use in this work. In view of the value such would be to the design or testing engineer, as well as to industry as a whole, it seems that its assembly would be a pressing duty of the research engineer.) Then by ascertaining, with the same standard test, the resistance of the water entering into the problem, a simple calculation would give the minimum necessary value of electrical current flow to each and every square inch of cathode surface to be protected.

The solving of the next problem is not such a simple matter; although practical intelligence will perhaps be of more help than a great deal of technical knowledge.

In the majority of cases, it would be impossible to secure proper protection by the installation of one anode. Usually, when only one anode is installed, some portions of the cathode surface receive a great deal more current than is required, because of their nearness to the anode, while other portions receive inadequate current. This may somtimes be the case regardless of the current forced to flow from the anode. Therefore, it becomes necessary to determine locations wherein space exists for the placing of anodes; and then determine how the anodes, placed in these locations, agree with each other in respect to the approximate average distance between them and the portions of cathode surface they are expected to protect. Should this determination result satisfactorily, and should it be effected with a reasonably small difference between the minimum and maximum distances (in inches) from each anode to all portions of the particular surface which that anode is supposed to protect, then the installation is possible to be made with as near to ideal conditions as could be obtained.

Suppose that we were to protect the inside surface of a large steel box from chemical action resulting from free or basic acids contained in the water, with which the box is filled. Figure 3 illustrates a plan outline of such a box, having one anode placed in the center high enough from the bottom as to have the nearest portion of the bottom surface no closer to the anode than is the nearest side. A mere glance will indicate to us that there is too great a difference, here, between the distance "a," from the anode to the farthest portion of cathode surface, and the distance "b," from the anode to the nearest portion of cathode surface. Such a condition would result in very inefficient operation of the control system; and it is entirely possible that the farthest portion of cathode surface would receive inadequate protection, because of the drain of unnecessary current to the nearest portions.

Therefore, it becomes necessary for us to place two anodes in this box, located similar to Figure 4. The two anodes are connected in parallel to the positive terminal of the control unit. It is entirely possible that the same amount of current may be used in Figure 4 for adequate protection as would be used in Figure 3 for possible inadequate protection; and the required voltage may be reduced from that required for Figure 3. Of course, this would mean that the watts output of the control unit would be reduced; although greater protection of the box is obtained.

Spacing Anodes in Box

In Figure 5 is illustrated a similar box, with a steel partition reaching from the bottom to the top level of the box; but with the partition not connecting to the ends of the box. The spacing of the anodes for such an arrangement, to obtain the greatest efficiency of the control unit, would be made on a basis as shown; with the distance from the anodes to the bottom not being less than any other shortest distance. The only additional current required, in this case, would be that necessary to protect the additional surface of the partition; although the voltage and the watts output of the control unit may be reduced still more.

In the installation of new condenser boxes with the idea of applying chemical control equipment, it may perhaps be advisable to so place the condenser pipes and so construct the box as to facilitate highest efficiency, within reason, of the control equipment. In the application of chemical control equipment to present condenser boxes, a great deal will depend upon the practical intelligence of the installation engineer.

Tests

Before tests can be made that may be interpreted intelligently, two factors must be known: (a) Minimum necessary current flow to each square inch of cathode surface to properly protect that surface from the particular electrolyte (water). (b) The electromotive force required to force the minimum necessary current flow from the anode to a particular square inch of cathode surface (usually a square inch in that portion of surface farthest from the anode).

The problem of "a" would be solved by the laboratory determination of the resistance of the water under the standard test; and then tabulated data, which soon should be readily available, would be referred to for the final determination.

For instance: The tabulated data indicates (assumed) that 10 milliamperes must flow to 1 square inch of the particular kind of cathode surface in order to protect it from the possible chemical action of an electrolyte of 6 ohms resistance. The water is found to have a resistance (obtained by the standard test outlined for "O" in the formula of Paragraph 9) of 360 ohms. Dividing 360 by 6 shows that the water has a resistance 60 times greater than the resistance of the electrolyte referred to in the table. Therefore, one-sixtieth of 10 milliamperes, or 166⅔ microamperes per square inch is the minimum current required to protect that particular metal from the chemical action of that particular water. Multiplying .000166⅔ ampere by the total number of square inches contained in the cathode surface would give the total current that would have to flow from the anode to the total cathode surface; providing every square inch of the cathode surface was exactly the same distance from the anode.

Since this would refer only to theoretically ideal conditions, the actual total current required to flow from the anode system would very likely be of a much greater value than that arrived at by this process; but the actual total current required could hardly be arrived at, without a great deal of tedious calculation. It therefore simmers down to a point where a reasonably sufficient number of anodes are installed, so as to utilize the lowest practical voltage; and have these anodes properly placed, in respect to certain portions of the cathode surface. It will then be up to the testing engineer to determine, after installation, the minimum current necessary to flow from the anode system to adequately protect those portions of cathode surface farthest from the anode. Of course, this determined factor will dictate the control unit voltage and watts output.

The problem of "b" would also prove to be capable of being solved by a simple process; providing a clear understanding is possessed of the principles involved. It would probably be best for the author to outline, at this time, only the involved principles.

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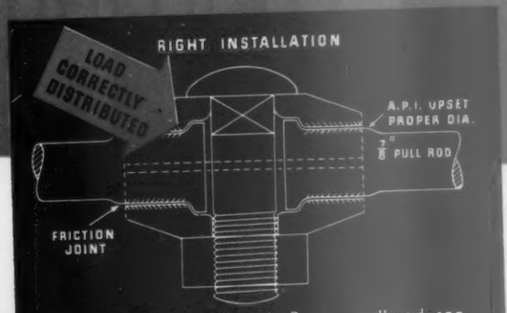

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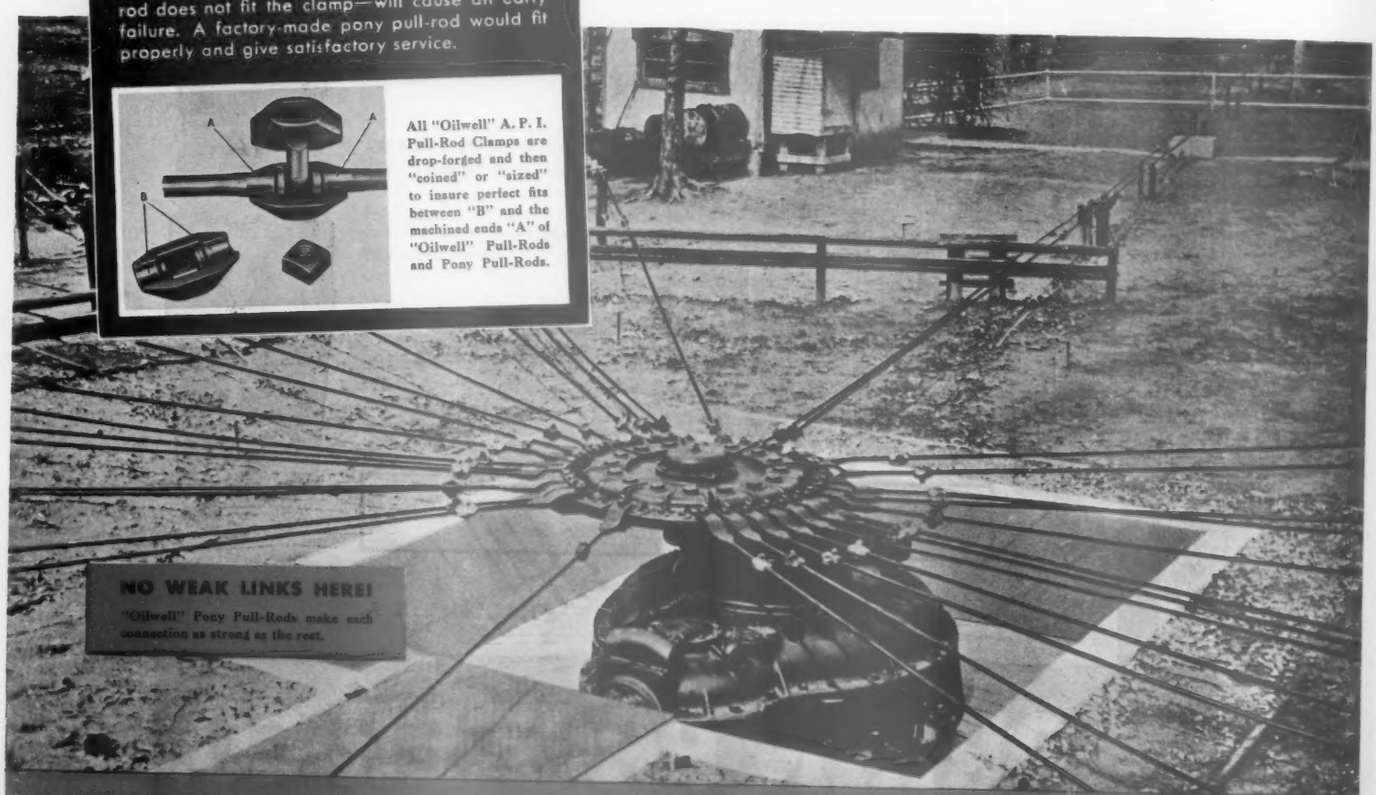

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experimental work done by the author, it has been found that certain principles consistently apply to the solving of testing problems. The results therefrom may be considered as correct until more detailed experience develops values and processes of calculation as will be known to be absolutely correct. Making tests for directly indicating the value of the current flow to any particular portion of a cathode surface is entirely out of the question; that is, no practicable instrument is available that would indicate, directly, the value of that current flow (with the exception of laboratory experiments) when artificial conditions may easily be made. In the case of milliammeters or microammeters, the resistance of these instruments must be comparatively high in order to obtain sufficient torque for the moving element. A very small resistance in the milliammeter or microammeter would give incorrect indication, if any indication at all. Therefore it is necessary to use electromotive force indications as the medium for determining current flow to individual portions of cathode surface.

Referring back to the discussion on spherical conditions of anode, cathode and electrolyte elements and their relation to current flow, consideration will now be given to the relationship between the current flow and the applied electromotive force; and this consideration will be for the total values as well as the values per square inch of cathode surface. In other words, an understanding must be had on how the control unit electromotive force exerts itself between the anode and the wide surface of the cathode, in order for us to devise means for obtaining an indirect indication of the current flow to any particular portion of the cathode surface.

10. In the case of a spherical condition of experimental elements, with current flowing from the anode to the cathode surface, it is found that the electromotive force exerting itself between the anode and 1 square inch of cathode surface is equal to the total applied electromotive force, existing between the anode and the total cathode surface, divided by the total number of square inches contained in the total cathode surface. For instance, should the spherical cathode surface contain a total of 10,000 square inches and an electromotive force of 3.35 volts is required to force a given current from the anode, through the electrolyte and into the total cathode surface, then the electromotive force exerting itself between the anode and 1 square inch of the cathode surface would be equal to 3.35 divided by 10,000, or 335 microvolts.

11. For elementary reasons not herewith stated but associated with current and voltage conditions in parallel circuits of resistances, the electromotive force necessary to exert iself between the anode and 1 square inch of cathode surface, to force a given value of current to that 1 square inch of surface, is directly dependent to a certain extent upon the square of the distance of that particular square inch of surface from the anode. In other words, in the case of a cathode surface having various portions at various distances from the anode, the minimum value of electromotive force that must exert itself between the anode and the various portions will be different. Therefore, it is reasonable to believe that it is only necessary for the testing engineer to determine the existing e.m.f., so to speak, at some particular square inch of cathode surface located at a known distance from the anode then, through proper calculation, associate this e.m.f. with the actual current flow to that particular square inch of surface.

An illustration of this is: The engineer has determined, beforehand, the minimum value of current which must flow to 1 square inch of the particular cathode metal for proper protection. We will assume that this value has been determined to be 150 microamperes. We will also assume that it has been determined that the resistance ("O" of Paragraph 9) of the electrolyte, or water, is 360 ohms. It is desired to find out what minimum value of e.m.f. must exist between the anode and a square inch portion of cathode surface located 74 inches from an anode; and this anode will be assumed to have a total surface area of 675 square inches.

Values for substituting in the formula would be:

$$A = 675$$
$$C = \sqrt{74.}\text{ or } 4.2$$
$$O = 360$$

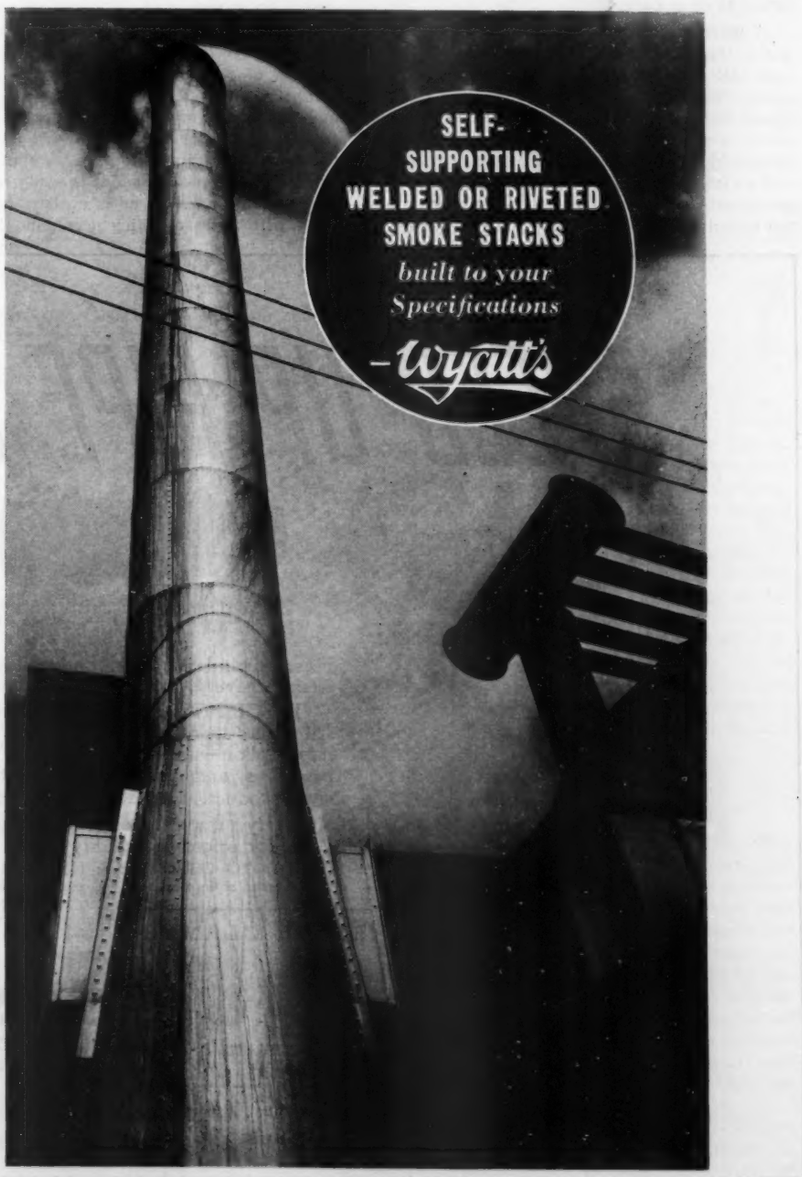
Therefore

$$R = \frac{CO}{A} = \frac{4.2 \times 360}{675}, \text{ or } 2.24 \text{ ohms.}$$

In accordance with Ohm's law, an electromotive force of .000150 × 2.24, or .000336 volt (336 microvolts) is necessary to force the minimum required current through the particular circuit of which 1 square inch of that portion of cathode surface is a part.

It is now the duty of the testing engineer to determine whether not less than this value of e.m.f. does or does not exist at the particular portion of cathode surface. He must remember that he is not to test for an e.m.f. which is zero at the point of contact between the water and the cathode surface, but is to test for that e.m.f. that actually will exist between the anode and the few square inches in the surface area of his electrode at any particular distance desired from the anode. (It is a mistake to believe that an electrical potential exists between an electrolyte and a cathode surface when they are making perfect contact.) In other words, the engineer is to determine what portion of the total anode-to-cathode e.m.f. is exerting itself between the total anode surface and one particular square inch of the cathode surface.

Off-hand, obtaining what we will refer to as cathode surface e.m.f. may appear to be a simple matter. In fact, the process is simple enough, but it is very much different from what one would first imagine. Usually, when placing a metal test electrode (even though it is of the same kind of metal as the cathode surface) in the water and connecting a millivolt meter between it and the metal forming the cathode surface, the millivolt meter indicates and e.m.f. with the control unit



in operation and also with the control unit not in operation—that is, both with and without a voltage being applied between the anode and the cathode. An elementary explanation of this phenomenon would be that the tank surface, the test electrode and the water form a voltage "cell"; and this "cell" generates an e.m.f. of such polarity as to tend to cause a current flow in a direction from the electrode, through the water and to the tank surface. The value of this "cell" e.m.f. of course depends upon the characteristics of those components forming the "cell," and will be found to be different in every case.

There is a difference, however, in the indication of the millivolt meter with and without the control unit in operation. It is found, whenever the control unit is turned on, that the millivolt meter indication falls off several points; but the instrument returns to its original indication of "cell" e.m.f. whenever the control unit is turned off. Figure 6 is presented in an effort to give an elementary, although inaccurate explanation of this phenomenon. The effect might be said to be similar to current striking the test electrode and tending to take the path offered through the millivolt meter, with the electromotive forces, operating in opposition to each other in the millivolt meter circuit, causing the instrument indication to drop back.

A more truthful explanation of this phenomenon is that a particular small portion of the control unit e.m.f. connects itself, so to speak, in series with the "cell" e.m.f. The result is that the short-circuiting effect of that portion of the control unit e.m.f. of the "cell" e.m.f. is directly indicated by the drop in the indication of the millivolt meter. Naturally, of course, the magnitude of that short-circuiting effect depends directly upon the magnitude of that portion of the control unit e.m.f. that is superimposed upon the surface area of the test electrode. It will be found that the magnitude of the effect is directly dependent upon the contact surface area of the test electrode.

The difference between the e.m.f. indicated with the control unit turned off and the e.m.f. indicated with the control unit turned on will be considered as the total e.m.f. exerting itself between the anode and the total surface of the test electrode. The e.m.f. per square inch of cathode surface equals this indicated total e.m.f. divided by the number of square inches contained in the contact surface of the test electrode.

We will assume that the test engineer is provided with a test electrode, consisting of an ordinary steel plate 4 inches by 4 inches with the back and edges painted with an insulating varnish, so that when immersed in the water the plate has 16 square inches of surface in contact with the water. To the back of the plate is connected an insulated copper test lead. Placing this electrode in the water and close to the portion of cathode surface to be tested, with the contact surface toward the anode and with a millivolt meter connected between the electrode and the metal of the tank, note is made of the millivolt meter indications with the control unit turned on and then with it turned off. We will assume that the difference between the two indications amounts to 5½ millivolts. Dividing 5½ by 16 (16 is the number of square inches contained in the water contact surface of the test electrode) results in an e.m.f. of 343 microvolts per square inch. Comparing 343 microvolts with the calculated microvolts per square inch required for that particular portion of cathode surface it is easily seen whether the actual e.m.f. is or is not great enough to agree with at least sufficient current flow to protect that particular portion of cathode surface.

When a certain value of e.m.f. is found—in the manner outlined above—at some portion of cathode surface farthest from the anode, and the current flow is calculated therefrom for this portion, it will be found that a greater e.m.f. exists between the anode and those portions nearer the anode. The reasons for, and the extent of this phenomenon are presented in the supplementary herewith; although, of course, ordinary reasoning will prove that it is necessary for a greater current to flow to the nearer portions than is required in order to obtain sufficient current flow to the farthest portions.

Instruments

It is usual for the electrical testing engineer to be equipped with an assortment of instruments for use on both alternating current and direct current. On direct current, he will, of course, use an instrument either of the d'Arsonval type or of the electrodynamometer type. On alternating current, he will not be able to use the d'Arsonval type; but use will be made either of some form of conventional alternating current instrument or of the electrodynamometer instrument. The electrodynamometer instrument, of low induction, will indicate the effective value of constant direct current; and it will also indicate the root-mean-square, or effective value of alternating current.

When it comes to pulsating direct current, such as obtained from modern rectifying devices used in so-called electrolysis control systems, confusion will result when the engineer tries to use both the d'Arsonval instrument and the electrodynamometer instrument. On half-wave, pulsating direct current, the electrodynamometer instrument indicates the root-mean-square value of the half wave; and this value is that heating ef-

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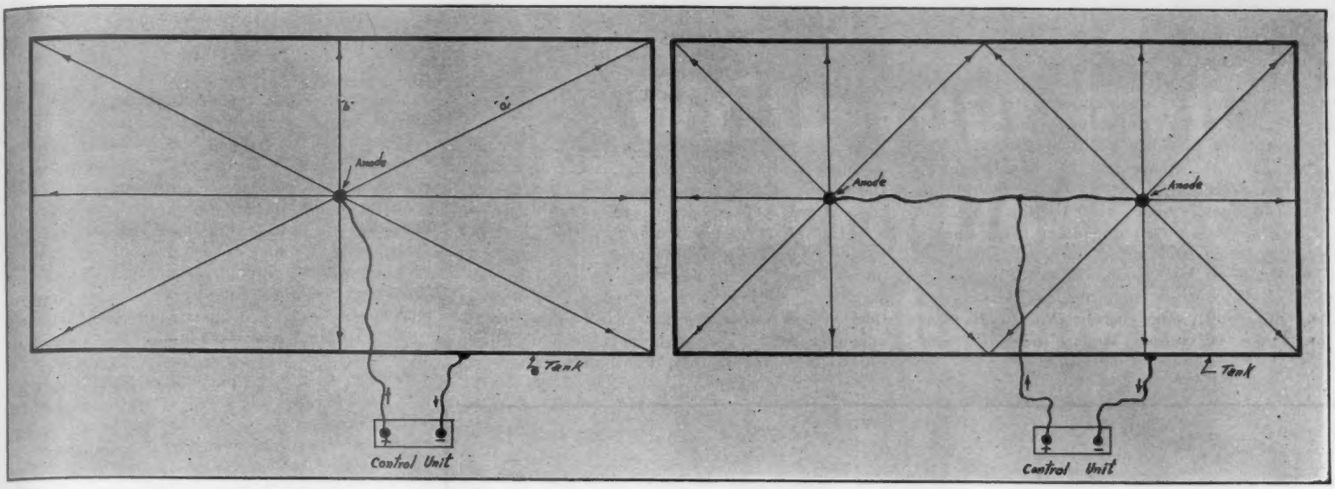


Fig. 3—Single-anode for electrolytic protection of a large oblong box *Fig. 4—Double-anode installation for greater protection of same box*

fect which this current has upon conductors, such as fuses, wires and ordinary resistances. The d'Arsonval instrument will indicate only about 63 per cent of the root-mean-square value of a half-wave pulsating direct current, and, consequently, only 63 per cent of the indication of the electrodynamometer instrument; and this indication of the d'Arsonval instrument is the simple average value of the half-wave pulsating direct current.

On full-wave pulsating direct current, the electrodynamometer instrument indicates the root-mean-square value; but the indication is, of course, of a full wave instead of a half wave per cycle. The d'Arsonval instrument, on full-wave, will indicate 90 per cent of the root-mean-square value, and, consequently, only 90 per cent of the indication of the electrodynamometer instrument.

There may perhaps be some argument as to whether the root-mean-square value or the simple average value of a pulsating direct current should be considered, when such current is being applied to purposes under consideration by this paper. However, it is the author's opinion that the simple average value, as indicated by the d'Arsonval instrument, should be used; because of the characteristic of the work desired to be done by the pulsating direct current. In other words, it might be said that the current flowing into a cathode surface during one impulse does not impart any force of momentum to any component at that point. Consequently, any work done at that point by the current during one impulse may be entirely lost before the start of the next impulse. Therefore, the work done by the current on the cathode surface may be considered as being in perfect time with the pulsations; and the effect would, therefore, be strictly in accordance with the simple average value of that current, rather than with the root-mean-square value.

Because of the characteristics of the principles connected with this subject, it seems apparent that it would be much more economical, from a standpoint of power cost, to use constant direct current than it would be to use pulsating direct current of either half-wave or full-wave rectification; providing we could obtain either of them from alternating current at the same cost of power loss, based upon the root-mean-square value. However, it so happens that the small difference in the "Form Factor" is that value obtained by dividing the reading of an electrodynamometer instrument, of low induction, by the reading of a d'Arsonval instrument, of a full-wave pulsating direct current and the Form Factor of a constant direct current more than justifies the use of the modern full-wave rectifier; because of its reasonable first cost and its remarkable economy in maintenance. From the author's point of view, a full-wave rectifier should be used in preference to a half-wave rectifier. It is very easy for the engineer to determine whether a rectifier is of the half-wave or full-wave type by simply comparing the readings of a d'Arsonval instrument with the readings of an electrodynamometer instrument, with both similarly connected to the direct current side. The percentage of difference between them will show the kind of current, as outlined above.

Choice of Equipment

In the selection of a millivolt meter for use in determining so-called cathode surface e.m.f., the higher the sensitivity (ordinarily, the higher the resistance of a millivolt meter the higher is the sensitivity) of the instrument element the more accurate are the results obtained. The adroit engineer will possibly devise ways and means of utilizing a potentiometer; since this instrument would not, ordinarily, require any part of the cathode surface protective current for torque purposes, but is merely balanced against the existing e.m.f. being tested for.

Taking Figure 3 under consideration, we will attempt to illustrate such factors as would approximately determine the characteristics of a system installed on such a basis as shown. The greatest distance "a" would perhaps be from the anode to the bottom corner of the box; and this distance will be considered as 222 inches. The least distance "b" would, of course, be from the anode to the side of the box; and this distance will be considered as 74 inches. The anode will be considered as possessing a total surface area of 675 inches, and the cathode surface will be considered as possessing a total water contact surface of 170,000 square inches. It is desired that not less than 167 microamperes shall flow to any 1 square inch of cathode surface, and it has been found that the resistance "O" of the water is 360 ohms.

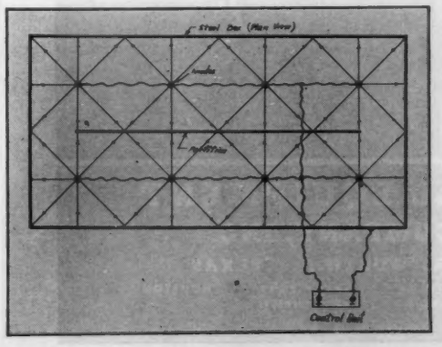


Fig. 5—Box protected with steel partition and many anodes

By considering an average distance of $\frac{222 \times 74}{2}$

or 148 inches, then the resistance between the total anode surface area and the total cathode surface area would be somewhere in the neighborhood of

$$\frac{\sqrt[\circ]{148} \times 360}{675}, \text{ or } 2.8 \text{ ohms.}$$

Although a knowledge of the total resistance between the anode and cathode may be interesting, it does not tell us how much current must flow from the anode to properly protect all portions of the cathode surface. Should we be in a position to determine this total current value, then, of course, the required voltage would immediately be dictated by this total resistance. It is therefore desired to gain some idea of the amount of current that must flow from the anode.

Should all portions of the cathode surface be 222 inches from the anode, similar to the interior surface of a hollow sphere with a radius of 222 inches, then the resistance between the anode and the cathode would be equal to

$$\frac{\sqrt[\circ]{222} \times 360}{675}, \text{ or } 3.232 \text{ ohms.}$$

Under such condition of 222 inches from the anode to all portions of the cathode surface, not only would 3.232 ohms be the resistance between the total surface area of the anode and the total surface area of the cathode. It would also be the resistance between the total surface area of the anode and any particular 1 square inch of the cathode surface at a time when current is flowing from the anode to all remaining portions of the cathode surface. Therefore, the resistance from the anode to any particular 1 square inch of cathode surface that is 222 inches from the anode is 3.232 ohms.

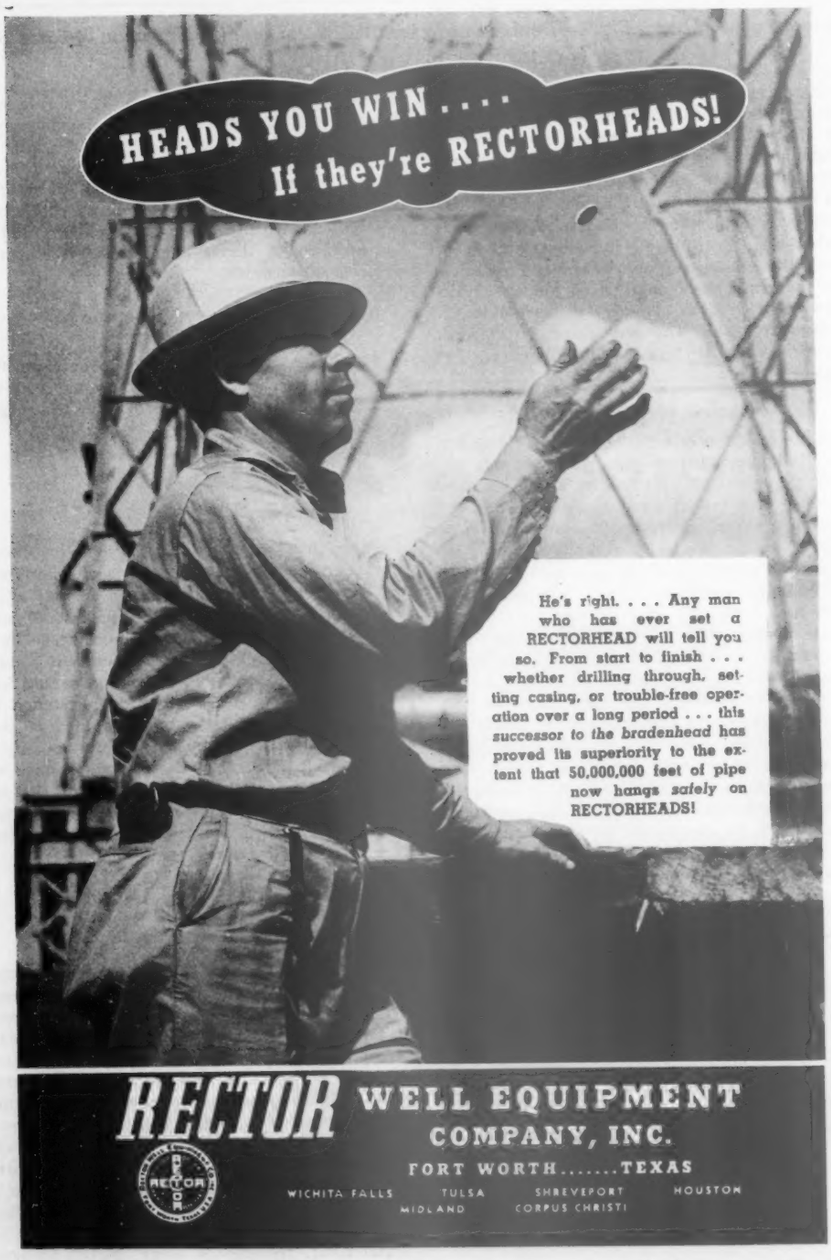
The e.m.f. required to force .000167 ampere to 1 square inch of the farthest portion of the cathode surface would be 3.232 × .000167, or

.000540 volt (or 540 microvolts). This is the e.m.f. which the engineer would test for at that farthest portion of surface.

Since an e.m.f. of 540 microvolts is that necessary to force 167 microamperes to each and every square inch of the cathode surface that is 222 inches from the anode, then it should also be the e.m.f. per square inch to force 167 microamperes to each and every square inch of an entire spherical cathode surface with a radius of 222 inches. With sufficient voltage being applied by the control unit to effect an e.m.f. per square inch of .000540 volt at the farthest portion of cathode surface, then the e.m.f. per square inch and, consequently, the current flow to the nearest portions of cathode surface may be determined by calculating on a basis of spherical elements, as follows: The resistance between the anode and the nearest portion would be

$$\frac{\sqrt[2]{74} \times 360}{675}, \text{ or } 2.24 \text{ ohms.}$$

A spherical cathode surface with a 222-inch radius would have the square of 222 divided by the square of 74, or approximately 9 times the surface area of a spherical cathode surface with a radius of 74 inches. Therefore, the e.m.f. per square inch at the portion of cathode surface 74 inches from the anode would be equal to 9 × .000540, or .004860 volt. Therefore, the current flow to the nearest portion would be .004860 divided by 2.24, or approximately .002170 ampere (or 2,170 microamperes) per square inch.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Although we know, now, the current flow and the e.m.f. to be expected at the farthest as well as the nearest portions of the cathode surface, it is reasonable to believe that an effort to calculate, beforehand, the actual total current and voltage output required of the control unit would run into a very tedious and extended process. Therefore, it is necessary, in design work, for detailed field experience to furnish sufficiently good judgment as to approximate the current necessary to flow to the total cathode surface.

Dividing the sum of .000167 and .002170 by 2 gives an average current of .0011685 ampere per square inch of the total cathode surface; but experience, as well as ordinary judgment, will tell us that this value is too high to be regarded as an average for a case such as in Figure 3.

Therefore, for the purpose of illustration, we will consider that one-third of the total surface would be regarded as having the same current value as the nearest surface; and that two-thirds of the total surface would be regarded as having the same current value as the farthest surface. Under such consideration, the total current flow from the anode would have to be approximately 260 amperes. The necessary total e.m.f. would be 260 × 2.8, or 278 volts.

A system installed as shown in Figure 3 is, therefore, entirely out of line, from the standpoint of economical cathodic protection to say the least. By making the installation on a basis as shown in Figure 4, with two anodes of 675 square inches each, the conditions would be as follows:

Each anode is to protect one-half of 170,000, or 85,000 square inches of cathode surface. The greatest distance would be reduced to 111 inches; and the least distance would remain as 74 inches. Two-thirds of 85,000 would be 56,500 square inches being considered as receiving .000167 ampere per square inch—or a total of approximately 9 amperes. Since the resistance to the farthest surface would be

$$\frac{\sqrt[2]{111} \times 360}{675}, \text{ or } 2.5 \text{ ohms, approximately, then}$$

the e.m.f. per square inch to the farthest surface would be .000167 × 2.5, or .0004175 volt.

The e.m.f. per square inch to the nearest surface would be

$$\left(\frac{111^2}{74^2}\right) \text{ multiplied by } .0004175, \text{ or } .000939375 \text{ volt.}$$

Since the resistance from the anode to the nearest portion of surface would be

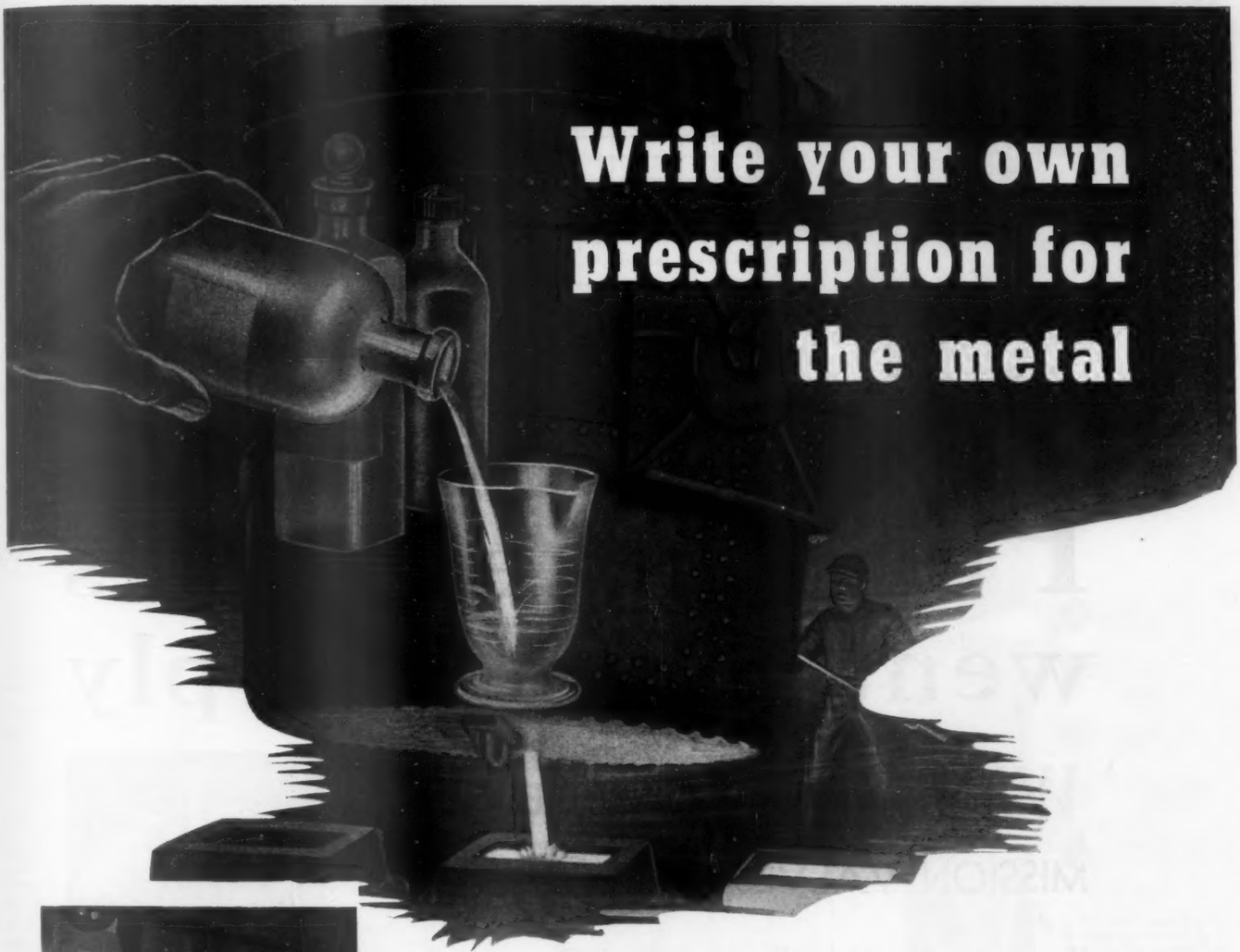
$$\frac{\sqrt[2]{74} \times 360}{675}, \text{ or } 2.24 \text{ ohms,}$$

then the current flow per square inch to the nearest surface would be .000939375 divided by 2.24, or about .000419 ampere. Since one-third of the 85,000, or 28,500 square inches will be considered as receiving .000419 ampere per square inch or a total of approximately 35½ amperes, then the total current flow from that one anode would be the sum of 9 (the number of amperes required for the first two-thirds of the surface considered) and 35½, or 44½ amperes. The total current required to flow from both anodes, connected in parallel, would be the sum of 44½ and 44½, or 89 amperes.

Considering each anode with its half of the cathode system as a separate system, with an average distance of 93 inches, the resistance to be considered for each anode would be

$$\frac{\sqrt[2]{93} \times 360}{675}, \text{ or about } 2.45 \text{ ohms.}$$

Then the total resistance, with the two anodes



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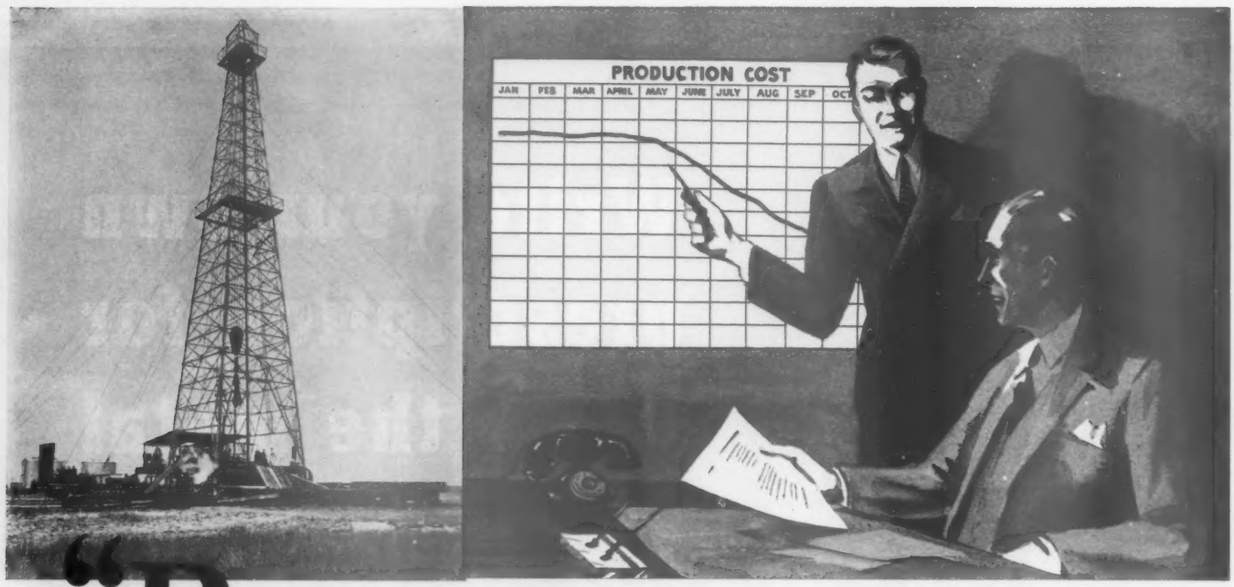

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connected in parallel, would be one-half of 2.45, or 1.225 ohms. The total e.m.f. required for this system would be 1.225 multiplied by 89, or 109¼ volts.

The reader may easily see how the additional anode, properly spaced, reduces the current requirement more than 65 per cent and reduces the voltage requirement about 85 per cent. It must be remembered, however, that increasing the size of the anode will decrease the voltage requirement; but this increase in size of the anode will not decrease the current requirement, unless the distances from the anode to the cathode surface are reduced appreciably.

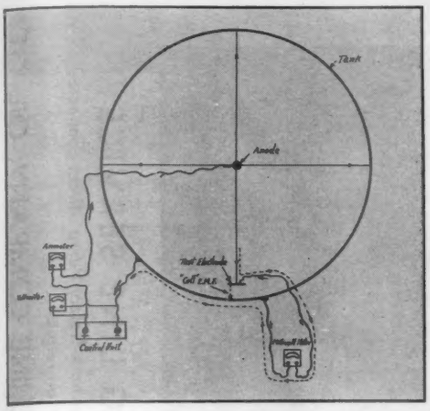


Fig. 6—Simplified diagram for wiring voltmeter and control unit

The value of .000167 ampere, given above as the minimum necessary current flow to 1 square inch of cathode surface, is merely taken for the purpose of illustrating the processes of calculation for designing and testing. It is the author's belief, from experiment, that the necessary current per square inch to protect ordinary tank steel from an electrolyte of 360 ohms resistance is very much lower in value than .000167 ampere. Accurate information, properly tabulated for this work, should be forthcoming in the very near future.

"THE PETROLEUM REGISTER"

The recurrent question about the location, organization and personnel of oil companies in all parts of the country and the world at large is answered in the nineteenth annual edition of The Petroleum Register for 1938, just issued. There are more than 33,000 listings in the 900 pages, covering refiners, producers, marketers and jobbers, pipe lines, compounders and grease manufacturers, refineries with names of superintendents, exporters, drilling contractors, natural gasoline plants, marine transportation and lighterage, in fact every branch of the oil business.

Included in the information are maps, branch offices, dates of annual meetings, capitalization, officers and directors, operating personnel, purchasing agents, pipe line superintendents, chief engineers, gasoline plant superintendents, refinery superintendents, gasoline plants, marketing facilities, location and capacity of refineries, properties, pipe lines and production.

More than 50,000 changes are reported in this year's edition, bringing it up to date in all particulars. There is also a great deal of valuable general information about the oil business, compactly arranged for ready reference. Trade and brand names, list of tankers, a general directory of petroleum personnel and a list of trade associations, are supplemented by an alphabetical index that assists in providing quick access to the information sought.

The Petroleum Register may be purchased through the Book Department of The Oil and Gas Journal at the established retail price of $10, express prepaid (postage additional outside the United States), and a copy will be forwarded promptly upon receipt of check or money order. Where payment or purchase order does not accompany the order the book will be shipped express c.o.d. to avoid delay.

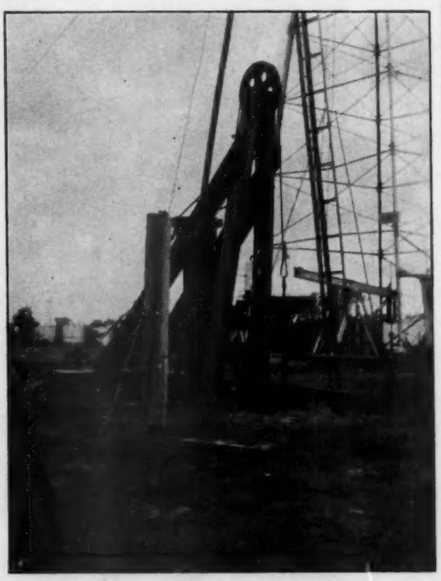
Water Well Pumped From Oil Well Jack

While checking subsurface strata as the oil well was being drilled, a dependable source of comparatively scale-free water was located and a water well sunk to the already located sand after the oiler was completed.

With the need for power pumping after the period of free flow ended, the oil well was connected to a central power, together with others on the lease, and a drive tailed on the well jack to power the water pump. By means of a joint of inch pipe, swiveled to the jack and carrying on its further end a wire line cable, the jack drive is carried around a 90° swing to the frame straddling the water well, where two servicing pulleys in an A-frame convert the horizontal pull on the cable to a vertical lift over the well barrel.

At the top of the polish rod on the water well is clamped a discarded gas engine flywheel to maintain tension on the cable at all times and prevent it from throwing a loop off the pulley at stress reversals.

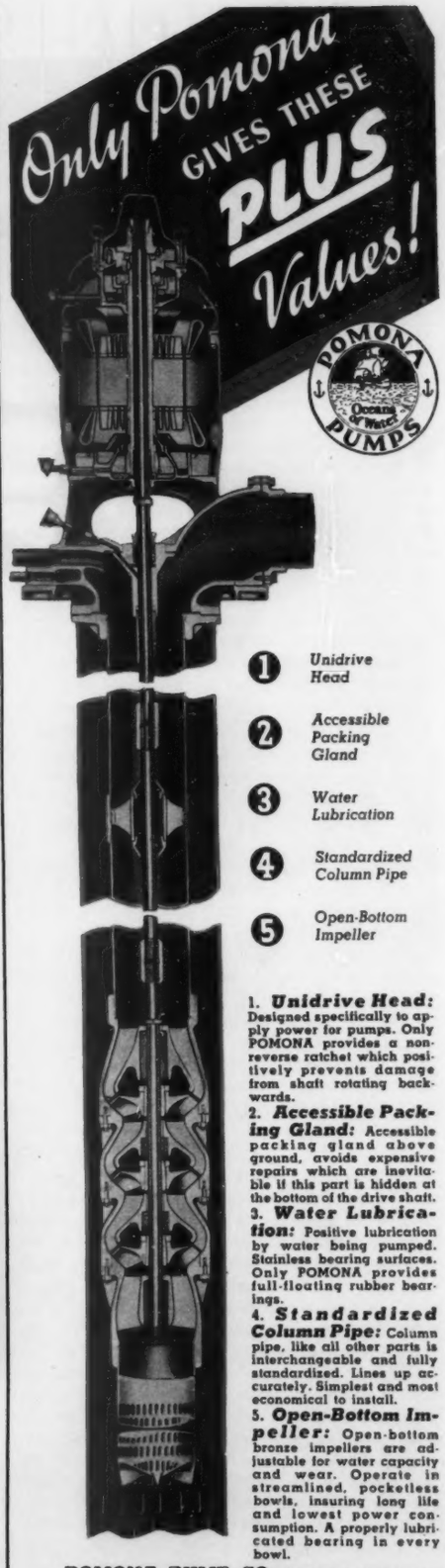
Since the counterweight on the water well is carried horizontally, it acts effectively to dampen out the tendency of the connecting cable to turn or twist during the stroke, and this helps maintain the water well rod line intact.



Pumping water well

C.I.O. Named Bargaining Agency For Richfield Engineers

WASHINGTON, D. C.—The National Labor Relations Board announced certification of Marine Engineers' Beneficial Association No. 79 affiliated with the Committee for Industrial Organization, as the sole bargaining agency for licensed marine engineers employed on the seven tankers operated by Richfield Oil Corp., Los Angeles, Calif. The board's action was based upon comparison of union membership dues cards against company payrolls, showing that the union had 17 of the 28 employes in the appropriate unit.



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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Preparing Doctor Solution, Test Method and Interpretation

How is a doctor solution prepared? What is the proper way to make the doctor test and interpret the results?—M. G.

The doctor test is used for detecting compounds which react with sodium plumbite; these being chiefly mercaptans and sulfides.

Supplies—The test is made in a 4-ounce oil sample bottle, which is fitted with a clean cork stopper.

The solution, sodium plumbite, is prepared by dissolving about 125 grams caustic soda, NaOH, in 1 liter distilled water, to which is added 60 grams litharge, PbO, and then agitating with air for 6-8 hours at 150°-175° F. After cooling restore to original volume by adding distilled water. Allow to settle, then draw off, (siphon or decanting) clear liquid into a bottle or jar, protected from the air.

Pure dry flowers of sulfur is provided, kept in a closed container.

Procedure—Place 5 ml. of the plumbite solution in the test bottle, add 10 ml. of the sample. Stopper with a clean cork, shake for 15 seconds. Add a small pinch of sulfur, just enough to cover the interface, stopper and shake for 15 seconds, allow to settle.

Interpretation—If the sample becomes discolored, or the sulfur film flecked with brown or black, the test shall be reported positive and the sample designated "sour." If there is no discoloration and the sulfur film remains clear, the test is negative and the sample "sweet."

Note: A black precipitate formed upon adding the plumbite solution indicates the presence of hydrogen sulfide.

Reference: Federal Specification VV-L-791a, Federal Standard Stock Catalog, Sec. 4, Methods for Sampling and Testing.

Mackey's Spontaneous Combustion Test Applied to Oily Textiles and Waste

The Mackey test of an oil is reported to be 216° F. in one hour. What does this mean and how is the test made?—C. R. Y.

The Mackey test has for its object the determination of the tendency of an oil, unsaturated fatty acids and other substances, to oxidize so rapidly as to cause staining of textiles and to be dangerous as a source of spontaneous combustion. The test may be applied to any sort of material, such as saw dust, oily waste and rags, that may be the cause of fires or damage to goods. An oil testing 216° F. in one hour is a dangerous oil from this standpoint. The description of the test will make this clear.

Apparatus—The test is made in a water-jacketed bath, measuring inside 7 inches high and 4 inches in diameter. The insulated cover is provided with two air ducts, or draft tubes, one of which extends to near the bottom of the bath and the other passes just through the cover, and an opening for a stopper fitted with a thermometer. A cylinder of 24-mesh screen 6 inches high and 1.5 inches in diameter is supported in the center of the bath. The bulb of the thermometer should stand in the center, about 2 inches from the top of the gauze cylinder.

Procedure—A wad of dry absorbent cotton is placed in a tared dish and adjusted to weigh 7 grams. Pour 14 grams of the oil sample onto this cotton and work the oil thoroughly into it. The oiled cotton is then placed in the cylinder, packed about the thermometer in the upper part of the cylinder. Maintain the water in the bath at 210° F. during the test. Record the observed temperature at the end of each 15 minutes for a total of two hours.

Any oil which develops more than 212° F. in one hour or 392° at the end of two hours should be classified as dangerous and liable to ignite spontaneously.

Several examples, illustrating the results obtained by the Mackey test are given in the table:

MACKEY SPONTANEOUS COMBUSTION TEMPERATURES

Oil tested—	Temp., °F. after— 1 hr.	1.5 hrs.	2 hrs.
Cotton seed	223	437	
Olein A	215	237	395
Olein B	208	215	234
Linseed	446		...
Lard		464	
Olive	215	385	450

Petroleum oils are not oxidizable under normal conditions and therefore show no appreciable rise in temperature under the conditions of the test. This test is of value for determining the quality of fatty oils intended for blending with mineral oils when making greases and compounded lubricating oils. The oxidizable oils may be blended with mineral oils without creating a dangerous mixture but these oils vary in the allowable quantity that may be blended with safety.

Small quantities of some of the mineral salts appear to behave as catalysts to hasten the reaction. Iron, sodium, magnesium and zinc salts have this action when present in quantities ranging from 0.5 to 2 per cent.

References: Mackey and Ingle, J. Soc. Chem. Ind., 15, 90, 1896. Gill, Ind. Eng. Chem., 16, 23, 1924.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Toluol

(Toluene)

Use—Solvent and chemical preparations.

Form—Colorless liquid with odor similar to benzol.

Formula—$C_6H_5CH_3$.

Molecular weight—92.

Specific gravity—0.8614.

Melting point— —139° F.

Boiling point—231° F.

LIMITATIONS

Color	Straw
Boiling point, min. °F.	225

Note—Obtainable in two grades, pure and commercial. Shipped in bottles, cans, drums and tankcars.

Refining of Lubricating Oils With Furfural

What is the operation for making lubricating oil by the use of furfural?—M. G. B.

In refining raw lubricating stocks with furfural, a continuous counter-current tower extractor is generally employed. The extraction tower is carried full of oil and the furfural is passed downward through the oil in the tower. The application temperature of the solvent varies with the type of lubricating stock. For the naphthenic type the temperatures may vary from 110° F. to 220° F., while for the paraffinic oils, the temperature ranges between 150° F. and 270° F. The oil is charged at the rate of 20 to 60 bbls. per square foot of overall tower area per 24 hours; the charge rate depending on the viscosity of the oil and the solvent dosage employed, the lower rate being that for the higher viscosity stocks and the higher solvent dosage.

Extract solution level in the bottom of the tower extractor is maintained by means of a dual gravity controller. Refined oil solution and extract solution flow from either end of the extraction tower to separate surge vessels provided for each fraction.

The refined oil solution contains from 8 to 15 per cent by volume of solvent. This solvent is removed in a vacuum flash tower after exchange with hot finished refined oil and hot solvent from the extract evaporator. The remainder of the heat necessary for the removal of solvent from the refined-oil-mix is supplied by circulation through the refined oil heater. Remaining traces of solvent are removed by flashing the hot oil from the vacuum flash evaporator into a vacuum steam stripper. The wet solvent is distilled from this stripper together with wet solvent from the extract stripper and is separated from the dry solvent taken off in the evaporator.

The extract mix, containing approximately 85 to 90 per cent solvent, is charged through vapor heat exchangers into an atmospheric flash tower for removal of a portion of the furfural. The partially evaporated mix is then charged through an extract heater into the pressure flash tower operating at approximately 40 to 50 pounds gauge pressure. The vapors from the pressure flash tower are exchanged with the incoming extract mix to the atmospheric flash tower described above. Thus the principle of multiple effect evaporation is employed in the removal of solvent from the extract mix. The bottoms from the pressure flash tower are then flashed into a vacuum steam stripper, where final traces of solvent are removed with steam. The wet solvent from this flash tower is combined with other wet solvent in a wet solvent tank where separation into two layers occurs. The two layers consist of wet furfural and furfural saturated water. These two layers are separately charged to fractionating towers for recovery of the furfural as dry solvent.

Recovered furfural is returned to the solvent storage or solvent surge vessel and is recharged to the tower extractor. Flue gas may be used to blanket all solvent-containing vessels for protection of the solvent and protection against fire and explosion hazard.

Reference: Bryant, Manley and McCarty, Refining of Lubricating Oils With Furfural, Proc. Am. Pet. Inst., Sec. 3, Tulsa, May 14-16, 1935.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Natural Water Drive

More than 20 years ago engineers in the oil industry began a study of the movement of formation waters through producing sands. It had long been known that after a well had been produced a while salt water usually broke in and contaminated the oil. This water encroachment was looked upon as an unavoidable natural condition and an evil to be put up with by the producer. Other observers who had been studying the relation of natural gas to oil production came to the conclusion that water as well as gas played an important part in driving the oil out of the sand and into the well. They recognized the need for conservation of both the natural gas and water energy and believed if controlled these natural forces could be made to aid in the recovery of oil from the reservoir.

While these studies of water conditions in oil bearing formations have been carried on for many years it is admitted there is still a lot to be learned about the mechanism by which water operates in driving oil through reservoir rocks. There are several factors entering into this study and while most of these functions are understood separately it has been difficult to correlate them and arrive at definite conclusions as to the combined effect. Much work has been done in the laboratory and a great deal has been published on this subject but it is admitted there is much more to do both through investigation and education to bring about the ideal conditions set forth by engineers and geologists.

It is known that as oil is withdrawn from the reservoir rocks water under hydrostatic pressure will move into the partially void space. This water movement if controlled will clear the pores in the rock of the major portion of the oil. But it is also known that the rate of water movement through the pores of the reservoir rock is usually at too slow a rate to allow the commercial production of the oil from the pool. Surface ownership creates conditions unfavorable to the application of ideal production principles to most fields. If the field is owned by one company, or by a small number of operators who are in accord as to production practice to be applied, it has been demonstrated that great benefits will accrue to the owners through application of modern production methods. The wells can be spaced at wider intervals, made to flow in a natural manner for a longer time and a much larger proportion of the oil can be recovered ultimately.

Where the surface rights are vested in many owners it is desirable to unitize the block of acreage over the pool before development begins. This presents other problems which are at times difficult to overcome but it is hoped with education of the persons owning the varied interests in oil fields it will be possible to conclude unit agreements in many new areas where oil is to be discovered and then operate the field under controlled production plans which will yield the greatest returns to all concerned.

Such plans would contemplate the full utilization of the natural forces stored with the oil. The reservoir would be considered as a unit and all of its characteristics ascertained in advance of complete development. The capital investment would be limited to the character of the pool and based upon returns in keeping with good investment practices. One big advantage would be in the reduction of capital through the proper placing and drilling of a minimum number of wells to secure the maximum volume of gas and oil. Pressure maintenance is advocated as a means of causing the wells to flow longer. Under proration these fewer wells would be permitted to produce larger quantities of oil each day. Landowners, royalty owners and operators would enjoy better returns and the natural resource would be conserved and applied in a better way.

Resume of Problems Relating to Edgewater Encroachment in Oil Stands

The above title has been given to report of investigations No. 3,392 prepared by F. G. Miller and H. C. Miller of the San Francisco, Calif., office of the Bureau of Mines. The purpose of this paper was to present a review of all literature dealing with the subject and outline some of the accomplishments through application of theories of edgewater control to oil fields.

It is pointed out that R. Van A. Mills more than 17 years ago performed a large number of experiments in the San Francisco laboratory of the Bureau of Mines to study subsurface principles and relationships in reservoir sands. This work was reported in three papers by Mr. Mills. Some of the first experimental evidence that the movement of oil and water in sands incident to drilling and operation of wells is governed largely by texture and bedding and more especially by variations of these characteristics in the reservoir rocks was secured by Mr. Mills.

More recent experiments and investigations have covered the relative attraction of oils and water of different physico-chemical characteristics for silica (sand). These experiments have demonstrated that when two immiscible liquids are brought into mutual contact with a solid surface, the solid will be preferentially wetted by the liquid possessing the greater attraction for the solid. Of special interest to the industry is the fact that the investigations indicate water will displace most crude oils from silica surfaces under ideal laboratory conditions.

One conclusion drawn from the study of interfacial forces within the capillary pores of porous media has been that the water-oil contact in a reservoir is not a level plane but higher in "tight" than in permeable sands. The difference in level of a water table in any oil field would be difficult to predetermine and for practical purposes may still be considered as a level plane. As oil is withdrawn, however, the movement of water through the reservoir may be largely affected by this phenomena and therefore the advance of the water will not be along a straight line front.

Water encroachment can usually be detected by observing the change in daily rate of production. During the flowing life of the well there will be a gradual decrease in rate of production. When placed on mechanical lift there will be still further decline until such time as the water nears the well bore then the daily production rate will increase but soon fall off again as water makes its appearance. After water starts to enter the well the volume will increase until such time as the water-oil ratio is so great as to make the well no longer economical to produce.

Field observations show that when a well starts to produce water, the temperature of the liquid will increase. This has been explained by the fact that although the temperature of the water and oil in the reservoir is not greater than before the entrance of water which has a specific heat twice that of oil and contains twice the thermal energy per pound, the heat loss is not increased in proportion to the heat content, and the temperature of the mixture at the well head is higher than when oil alone was being produced.

The paper points out the importance of controlling the rate and manner of movement of edgewater in reservoirs as it affects oil-recovery efficiencies and production costs. Some of the literature relating to movement of water into oil sands has been reviewed to indicate the present trend of thought and to show the need for additional research on the problem of increasing recovery efficiencies by more efficient utilization of the energy.

It is suggested further research of the conditions that affect the oil-recovery efficiency of an oil-water interface moving slowly through an oil sand would be of prime importance from the viewpoint of the operator. Doubtless, oil-recovery efficiencies that result from a slowly moving oil-water interface are a function of many variables. If these variables can be expressed in terms of velocity for the purpose of pointing out the optimum velocity of movement of the oil-water interface for a given set of reservoir conditions, they will have practical application to field operations. For example, if the properties of the oil, edgewater, and reservoir formation are known, an optimum rate of water encroachment might be predicted that could be maintained by applying back pressure on the producing strata or otherwise controlling the rate of fluid withdrawal from the reservoir.

The discussion has been limited to sands filled with liquid or in other words to reservoirs in which the pore spaces in the sand below the oil-water interface are filled with water and those above are filled with oil. The possibility of presence of so-called connate or "residual" water is appreciated but not considered. This condition existed in fields such as the East Texas, where the oil was undersaturated with gas and at certain production rates moved through the sands toward wells by hydrostatic pressure and as a result of the expansion of the water in the extraneous part of the reservoir. Actually, then, in reservoirs exemplified by those of East Texas, the problem of more efficient oil recovery becomes, in a large measure, a study that involves the flow of a slowly moving oil-water interface through the sands. The problem is much the same in fields where the reservoirs contain free gas if the sand immediately above the oil-water interface is filled with oil under a pressure higher than that of gas saturation.

A different type of problem, one very similar to that manifest in fields under secondary recovery by artificial water drive, is presented if the sand above the edgewater line or gas and oil-water interface is filled with a mixture of oil and gas. This condition exists in reservoirs where oil and gas are produced from wells at such rates that reservoir pressures have decreased to less than the pressure at which gas will remain in solution in the oil. Probably all commercial (economic) rates of withdrawal of oil and gas from reservoirs result in some decline in reservoir pressure. The production of oil and gas in volumes that greatly exceed the volume replacement by water and the consequent result in excessive lowering of reservoir pressures are not conducive to efficient recovery.

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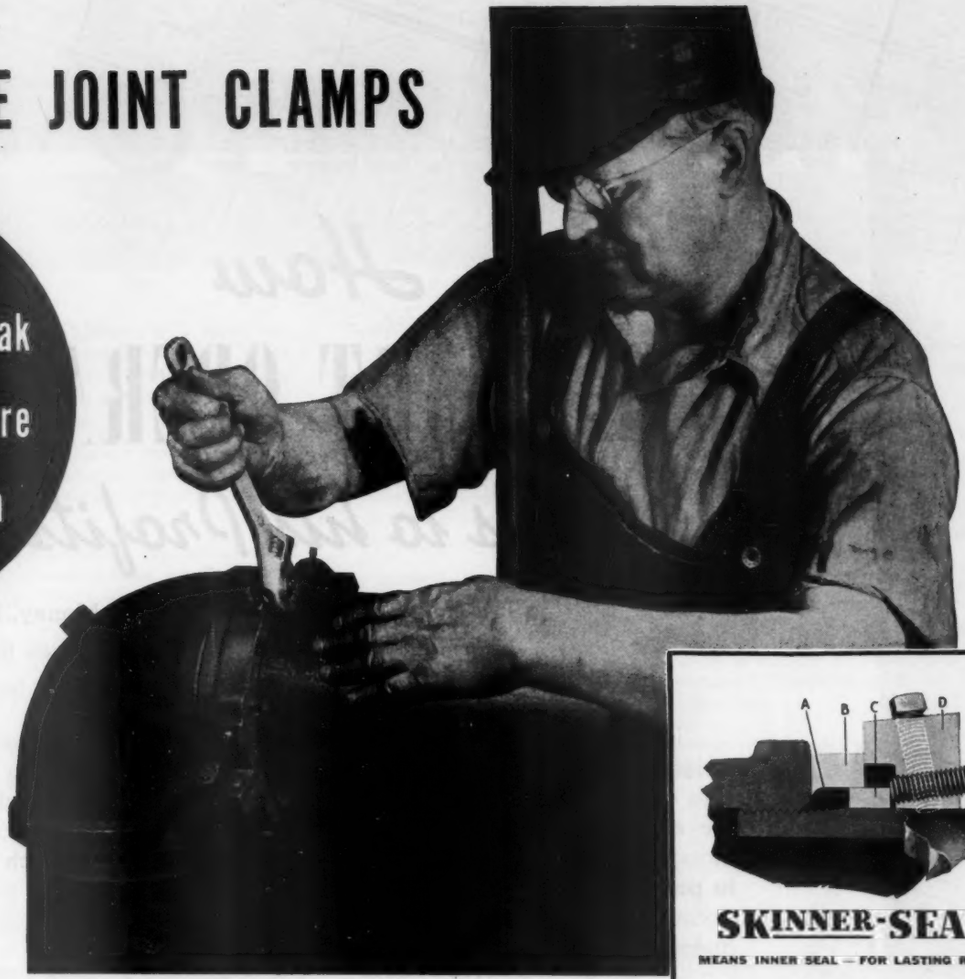

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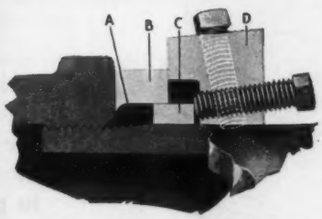
Typical installation on fuel oil line between loading docks and refinery.



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FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—Southeast of the Braman field in Oklahoma, on a school land lease in section 16-28-4w, Helmerich & Payne have opened a new pool in Wilcox sand. The Sinclair Prairie discovery in section 27-16-1e, Logan County, which opened a Wilcox sand pool about 6 miles from any other production, is shut in for pipe line connections. It looks like an 800-bbl. well.

KANSAS—Trees Oil Co. extended the Hittle pool in Cowley County and an outpost to the Letsch pool in Russell County is showing production. The Ainsworth and South Ainsworth pools in Barton County may have been joined by the 1,166-bbl. well completed in section 3-17-13w.

TEXAS—Duggan pool in Cochran County was extended 2 miles southerly. An important wildcat in Yoakum County, 2 miles southwest of Plains was dry at 5,629 feet, and abandoned. The Denver area in Yoakum County was extended a mile and a half. Several prospective pool openers loom in the Central Basin area of West Texas, one 5 miles west of the Fuhrman field; one east of the Means pool, and one in southern Andrews County. Jones County, Central Texas, has three tests that act like pool openers, and a third producing horizon was found in the Noodle pool. A deep wildcat 3 miles south of Wichita Falls found a saturated section of what is believed to be Ellenburger lime, and set pipe preparatory to testing. Young County's new pool opener produced 1,275 bbls. per day from the Caddo lime on a test. In Eastern Texas a Flag Lake outpost, 2½ miles from the pool, was dry and abandoned. Limestone County is to have another 6,000-foot test, 3½ miles northeast of Thornton. In Southwest Texas the South Alice pool in Jim Wells County has prospects of a mile-east extension. A wildcat 4 miles south of Woodsboro, Refugio County, made a promising showing on a drill stem test.

LA-ARK-TEX—Wildcats in Plaquemines, St. James, Vermilion and Lafourche parishes in Gulf Coastal Louisiana, were being tested after all had shown good indications of oil or gas or both. The Schuler field in Arkansas was given a larger allowable and increased its production materially in the past week. Stanolind Oil & Gas Co.'s discovery well in the Lower Marine formation in Cotton Valley, Louisiana, should be completed this week.

ILLINOIS—Twenty-seven new oil wells were completed in the state. The Texas Co. cored saturated Benoist sand in section 5-1n-2e, 8 miles east of Centralia, but drilled to the McClosky. The well flowed over the derrick from the lower formation.

MICHIGAN—The largest gasser ever struck in Michigan outside of Montcalm County was brought in in Clare County. It started at 21,000,000 feet per day. Allegan County continued to lead in results with four new wells.

CALIFORNIA—The first well in the Guijarral Hills field in Fresno County was completed for 4,500 bbls. of oil and 12,000,000 feet of gas.

Completions in All Fields

(Week Ending July 2, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	43	5	4	52	1,988	2,128
Ohio	7	4	5	16	469	551
Indiana	0	0	0	0	42	42
Kentucky	9	1	4	14	405	273
Illinois	27	0	7	34	554	37
Michigan	13	1	5	19	410	421
Kansas	13	0	15	28	869	1,219
Oklahoma	21	1	19	41	900	1,461
Texas:						
North Central Texas	38	0	9	47	1,584	1,462
West Texas	19	0	3	22	1,143	1,316
Texas Panhandle	14	1	0	15	319	348
East Texas	30	0	0	30	1,105	1,100
East Central Texas	5	1	4	10	183	359
East Texas Border	2	0	0	2	83	204
Gulf Coast Texas	19	0	8	27	649	747
Southwest Texas	33	0	9	42	1,078	1,642
Total Texas	160	2	33	195	6,144	7,178
North Louisiana	7	1	5	13	320	343
Gulf Coast Louisiana	5	0	2	7	243	236
Total Louisiana	12	1	7	20	563	579
Arkansas	3	0	0	3	126	65
Montana	3	0	0	3	42	91
Wyoming	1	1	0	2	80	48
Colorado	0	0	0	0	5	6
New Mexico	4	1	0	5	283	384
Utah	0	1	0	1	1	1
California	20	0	9	29	672	764
Total United States	336	18	108	462	13,553	15,248
Total previous week	369	34	126	529		
Difference	33	16	18	67		

Outstanding Fields--Highlights

(Week Ending July 2, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	4	6	4	2,276	552	17,439
West Saxet	0	5	0	0	27	1,826
Saxet	2	7	2	370	605	29,439
Benavides	2	11	1	202	208	9,839
East Texas	18	96	30	1,614	25,327	364,930
Talco	2	3	3	818	643	23,896
Ector County	18	73	8	14,567	1,130	34,108
Winkler County	11	14	2	893	1,658	35,127
OKLAHOMA						
Dora	1	7	0	4,120	71	4,725
Oklahoma City	2	10	1	135	1,086	73,450
KANSAS						
Barton County	3	19	4	4,120	324	7,934
Stafford County	3	21	2	1,603	139	3,914
Rice County	2	17	0	0	1,172	23,731
Russell County	4	22	1	1,793	1,092	22,104
NEW MEXICO						
Lea County	12	91	2	4	797	84,450
LA-ARK-TEX						
Rodessa, La-Ark-Tex	3	15	2	575	1,001	74,960
Jennings, La.	2	11	1	350	109	20,211
Cotton Valley (deep)	1	20	1	35	69	10,720
Lisbon, La.	2	14	3	1,635	236	10,590
Schuler, Ark.	1	16	2	2,335	65	16,640
MICHIGAN						
Buckeye	2	20	3	425	416	21,988
ILLINOIS						
Central Illinois	38	191	27	6,574	671	35,118
CALIFORNIA						
Wilmington	4	31	3	508	501	92,525

By
MITCHELL TUCKER

Extend Duggan and Denver; Three Pools Loom in Jones

FORT WORTH, Tex., July 4.—In the northernmost portion of the Permian Basin territory, a 2-mile southern extension was given the Duggan pool in Cochran County last week. Devonian-Honolulu-Cascade companies No. 1-C-8 Duggan flowed 120 bbls. of oil in 20 hours after a 2,000-gallon acid treatment from 5,003-51 feet. The well will be treated again before production gauge is taken.

Texas Co. announced location for an offset to the discovery well in the Walker area in southwestern Yoakum County last week. It will be a south offset to its No. 1 Walker, completed last year for 125 bbls. per day. Texas Co. has also staked two new locations on the outer limits of the Wasson field in Yoakum County.

A failure for Yoakum County was registered when Magnolia Petroleum Co. No. 1 Webb, wildcat 2 miles southwest of Plains, was abandoned after drilling to a total depth of 5,659 feet. The test was plugged back and acidized in the upper levels without success. It is in section 477.

Helmerich & Payne, Inc., and Continental Oil Co. No. 1 Dowell, section 896, extended the Denver area 1½ miles south and west, was shut down last week awaiting pipe-line connections. Total depth is 5,035 feet, with the well having flowed 135 bbls. of oil in 24 hours naturally.

Southwestern Gaines County's once promising field opener, Eastland Oil Co. No. 1 Dunbar, gave indications last week of being a failure. After pumping off accumulations of oil, it started making sulfur water at the rate of three bbls. hourly. Total depth is 4,640 feet.

Four miles northwest of the discovery in the Slaughter field in southwestern Hockley County, Gulf Oil Corp. has staked location for another wildcat, No. 2 Mallett Land & Cattle Co., Labor 25, League 34, Concho County School Lands. The company recently completed a three-quarter mile southeast extension to the field, and continues testing on its prospective 2½-mile southwestern extension.

Central Basin

Andrews County centered most of the activity in the central basin area over the past week, with several prospective field openers making good shows. In the southern part of the county, R. R. Rhodes and J. D. Tompkins No. 1 E. Cowden, a wildcat in Block 44, T.&P. Survey, flowed an estimated 60 bbls. of oil in one hour after being shut in for several hours. Bottomed at 4,220 feet, the test is scheduled for a two-stage acid treatment before gauge is taken.

Olson Drilling Co. No. 1 Lockhart & Brown, 5 miles west of the south end of production in the Fuhrman field, was cleaning out with pump after acid treatment. At a total depth of 4,584 feet, this test made several good flows and may be the opening of a new producing area.

Failure for Frank S. Perkins and others No. 1 Cowden, wildcat drilled to 8,012 feet in southwestern Andrews County, was indicated when the hole filled 2,000 feet with sulfur water following perforating from 7,667-85 feet. This was one of the deepest tests drilled in the central basin area.

One-half mile east of the Means pool in Andrews County, Humble Oil & Refining Co. No. 46 flowed at the rate of 120 bbls. hourly after a two-stage acid treatment, to give that field its most important extension of the year. Bottomed at 4,535 feet, it is shut in for official gauge. Location for No. 47 Means, one-half mile south, has already been made.

Two eastern outposts to the Keystone pool in Winkler County were staked last week by J. R. Sharp. One is about one-half mile northeast of production, and the other another one-half mile east.

Southern Basin

After swabbing for 16 hours Gulf Oil Corp. No. 8 Waddell, one-quarter mile northern outpost in the Ordovician producing area at San Hills, Crane County, recovered only 34 bbls. of oil. Operators plan to acidize the section and retest at the present total depth of 6,083 feet. Five miles to the northwest, the same operator's No. 4 McKnight, Ordovician wildcat in section 3, Block B-21, P.S.L. Survey, was drilling below 4,806 feet.

Ector County's important wildcat, Ranger, Casteel & Mixon No. 1 Hendrick, in the southwestern part of the county, was drilling below 4,194 feet. The test has picked up good showings in the last 300 feet, and it is hoped to encounter its best saturation in the next 100 feet.

Pecos County

In the Imperial area of northern Pecos County, Magnolia Petroleum Co. No. 1 McKee, Ordovician wildcat which started plugging back two weeks ago, has tested beds up to 6,180 feet without signs of production. Operators now intend to attempt to obtain production from sands in the Middle Simpson, from which heads of oil and gas were made while drilling several months ago.

WEST CENTRAL TEXAS

Jones County had most of the West Central Texas activity last week, as three new fields appeared to be in the making. In the southeastern part of the county, L. R. Terry and others No. 1 J. O. Bartlett was given an official gauge of 80 bbls. in 24 hours from the Tannehill sand from 1,590-92½ feet. Expansion of this pool is already being sought by two tests staked by Wrightsman Oil Co. One of its tests, in the 56-acre F. W. Shotwell farm, will be a southeast offset to the discovery, while the second will be in the Powers tract of 81 acres, northeast of the pool opener. Both locations are in the W half of section 59-14, T.&P. Survey.

Third and deepest producing horizon for southwest Jones County's 12-year-old Noodle Creek field was proven last week. Estimated good for about 700 bbls. per day, Humble Oil & Refining Co.'s second well east of the pool headed oil naturally after casing had been reamed to 2,910 feet to complete an upper water shutoff. Production is from a sand which has been correlated as the Swastika. It was drilled from 2,915 feet to the present depth of 5,932 feet Production tests will be run when the well is thoroughly cleaned out.

Also in Jones County, W. L. Snoddy and C. C. Dodson No. 1 C. L. Steffins, which two weeks ago indicated a new pool from the 1,900-foot level, was still testing, with no official gauge taken. It was reported to be making about 300 bbls. daily by heads after shooting from 1,833-1,909 feet.

In Fisher County, Forest Development Co., which several weeks ago opened a pool in the western part of the county about 6 miles southwest of Rotan, was reported making about 16 bbls. of oil per hour following a two-stage acid treatment from 3,685-95 feet.

In Stephens County, testing continues at G. W. Rich No. 1 J. W. Andrews, prospective pool opener of two weeks ago. While pulling outside casing last week, it made an unestimated flow and indications are it will make a producer from the Lake sand in which saturation was topped at 3,667 feet. This structure was mapped by soil analysis surveys.

In Throckmorton County, Jones & Stasney No. 1 Brockman, which indicated a new Caddo Lime pool for the southwestern part of the county two weeks ago, is being drilled deeper. The wildcat was drilling below 4,430 feet as the week closed.

Five miles north of Stamford in southern Haskell County, Fain-McGaha Oil Corp. was coring through an upper pay section in its No. 1 Bankers Life Insurance Co. This is the third try for Haskell County's new Pardue pool. The test is coring at the 2,000-foot level, and expects to test a horizon which had shows in the upper two tests drilled. Regular pay horizon for the Pardue pool is in the Ellenburger at 4,375 feet.

Verdict on the northeast outpost to Shackleford County's Ivy pool will be known within a few days. It is being drilled by J. G. Hammond and is in section 159, one-half mile north of the productive limits. The test is drilling below 3,000 feet, and is seeking production from the Palo Pinto lime at 3,200 feet.

WEST TEXAS COMPLETIONS

Andrews County

F. S. Perkins No. 1 E. P. Cowden, dry and abandoned at 8,012 feet.

Crane County

Gulf Oil No. 175 McElroy, 2,790-3,050 feet, 522 bbls.

Ector County

Atlantic Refining Co. No. 1-B T. & P. Land Tr., 4,240-4,218 feet, 52 bbls. Barnsdall No. 1 J. E. Witcher, 4,005-75 feet, 799 bbls. Broderick & Calvert No. 2 T. & P. Land Tr., 4,065-4,195 feet, 2,950 bbls. Continental Oil No. 8-27 T. & P. Land Tr., 4,000-4,170 feet, 3,265 bbls. Humble Oil & Refining Co. No. 15-C Scharbauer, 4,200-4,230 feet, 904 bbls. Lee Drilling Co. No. 4 T. & P. Land Tr., 4,001-4,165 feet, 2,997 bbls. Tide Water-Atlantic No. 3-C O. B. Holt, 4,275-4,361 feet, 1,114 bbls. L. H. Wentz No. 6-A T. & P. Land Tr., 4,028-4,182 feet, 2,486 bbls.

Gaines County

Amon G. Carter No. 1-C Wasson, 4,890-4,978 feet, 1,530 bbls.

Howard County

Gulf Oil Corp. No. 7 Otis Chalk, 3,005-3,200 feet, 720 bbls.

Pecos County

Aero Gas & Refining Co. No. 2 Campbell, dry and abandoned at 1,835 feet. J. J. Dorr No. 4 Payton, 1,950-2,012 feet, 176 bbls. C. S. Messenger No. 2-C Byrne, location abandoned. Pantex Oil Corp. No. 1 State, 1,798-1,825 feet, 310 bbls.

Upton County

Bennett Oil No. 7 Sherk, 2,592-2,605 feet, 124 bbls. Devore & Minnich No. 9 Burleson, 2,010-2,168 feet, 231 bbls. Homestead Oil & Gas No. 8 Pure-Hughes, temporarily abandoned location.

Ward County

Gulf Oil Corp. No. 106 Hutchins, 2,605-2,777 feet, 654 bbls. Wister Well Ser. No. 3 D. L. Johnson, 1,945-2,050 feet, 137 bbls.

Winkler County

Bahoga & Bond No. 1 West, 5,127-5,255 feet, 49 bbls. Denver Producing & Refining Co. No. 9 Whittenburg, 4,880-5,066 feet, 844 bbls. Magnolia Petroleum Co. No. I J. D. Webb, dry and abandoned at 5,639 feet.

PANHANDLE COMPLETIONS

Gray County

Gulf Oil Corp. No. 13 Barrett, 3,115-3,288 feet, 520 bbls. Dorsyann Oil Co. No. 2 Bull, 2,865-2,987 feet, 192 bbls. Gulf Oil Corp. No. 9 Saunders, 2,985-3,010 feet, 441 bbls. Magnolia Petroleum Co. No. 11 E. Haggard, 3,243-80 feet, 194 bbls.

Hutchinson County

Cree, Hover & Dye No. 4 Harvey, 2,987-3,023 feet, 649 bbls. Gulf Oil Corp. No. 18 Dial, 2,967-3,085 feet,

(Continued on Page 82)

Kansas Developments

By
DAL DALRYMPLE

Pools in Barton and Cowley Extended; Wildcat Failures

Trees Oil Co. No. 3 Lewis, NE NW NE section 28-31-4, Hittle pool in Cowley County, extended the Arbuckle pay zone a half mile south on Saturday when the hole filled 1,000 feet with oil at a total depth of 3,326½ feet. It is an old well deepened. The Texas Co. No. 6 Hittle, south offset to the discovery well and in the NW NE SE section 21-34-4e, topped the Arbuckle at 3,323 feet and drilled in 1 foot. Six-inch casing will be set on top of the lime. McKnabb and Blair No. 1 Hittle, SE SW NE section 21-31-4, discovered the Arbuckle lime pay in this pool on May 20. The well made a potential production of 1,220 bbls. The lime was topped at 3,280 feet and the hole bottomed at 3,284 feet.

The Letsch pool in southern Russell County seemed due for an extension late in the week when Coralena Oil Co. No. 1 Hefferman, NE SE SW section 34-14-13w, brought up half a bailer of oil every two hours from Kansas City lime at 2,916 feet, total depth.

J. S. Alcorn, of Tulsa, plans to drill a test in Mitchell County, in northern Kansas, on one of two large blocks, which are now being checked by reflection-seismograph crews.

Western Kansas Oil & Refining Co. and Republic Natural Gas Co. No. 1 Linser, a wildcat between the Ainsworth and South Ainsworth pools, may be a connecting link that will bring the pools together. The well made a potential production of 1,166 bbls. of 37.9-gravity crude from Siliceous lime.

Thayer Drilling Co. No. 1 Soderstrom, in section 21-17-13w, Hoisington pool, which uncovered Arbuckle lime production in a pool that was opened as a Kansas City or Lansing lime producer, was given a potential of 458 bbls.

H. G. Newman and others have made location for No. 1 Fischer, a wildcat in Stafford County, 3 miles west of the Snider pool. It is located in the NE NE NW section 6-21-11w, on a farm-out lease of Stanolind Oil & Gas Co.

Fred Phillips made location for No. 1 Hanshaw, NE NE SE section 32-27-3, a wildcat, 7 miles west of Augusta in Butler County.

The Texas Co. made location for No. 1 Fouts, SW cor. section 4-16-13w, in the South Trapp pool in Barton County.

Simpson Oil Co. and others have rigged up a machine to drill a wildcat on land of the Equitable Life Assurance Society, SW cor. section 15-25-3, 1½ miles southwest of the Potwin pool in Butler County.

E. H. Moore, Inc., made location for No. 1 Johnson, SW cor. section 13-24-11w, Stafford County; also for No. 2 Johnson, NW SW SW section 13-24-11w. Derby Oil Co. was rigging up No. 5 McComb, NW NW NW section 24-24-11w. All three wells are in the Zenith pool.

Hammer & McLean were moving in materials to start No. 2 Oscar Peterson, SW NW SE section 24-19-3w, McPherson County. It will be a Mississippi lime test.

Chester Carlock made location for No. 1 W. C. Joy, NE NE NE section 14-12-18w, in Ellis County.

The completion record of the past week showed more dry holes than oil wells. There were 13 oil completions, 1 gas well and 15 failures. A 2,600-bbl. well in Ellis County was the largest of the week's crop. This was Magnolia Petroleum Co. No. 14 Johansen, SW SE NE section 22-11-17w, in the Bemis pool, which pumped 439 bbls. in the first four hours, and the same quantity in the second four hours, and was given a potential of 2,634 bbls. It produces from Siliceous lime at 3,380-84 feet and had not been acidized.

Russell County

Gulf Oil Corp. No. 2 Reinhardt, NE NE SE section 19-14-14w, Russell County, was dry and abandoned at 3,300 feet. Siliceous lime was topped at 3,294 feet. The core showed slight oil saturation.

Web-Son Oil & Royalty Co. No. 1 K. D. Baxter, NW NW SE section 4-15-15w, a wildcat, was a hole full of water and was abandoned at 3,429 feet. Siliceous lime was topped at 3,354 feet. The water appeared at 3,427 feet. No oil showing was reported.

Shell Petroleum Corp. No. 1 Schneider-B, SE SE NW section 1-16-14w, found Siliceous lime top at 3,322 feet, total depth 3,337 feet. It was acidized with 2,000 gallons, and pumped 360 bbls. the first four hours and 298 bbls. the second four hours, and was given a potential of 1,793 bbls. per day. It showed no water.

Estimated Daily Production

Estimated daily production for Kansas for the week ending July 2, and for the preceding week, was as follows:

	Barrels	
	July 2	June 25
Oxford City	1,100	1,275
Burrton	10,200	10,250
Ritz-Canton	4,175	4,250
Graber	2,725	2,100
Hollow-Nikkel	3,000	3,025
Lerado	775	900
Voshell	1,925	2,175
Wellington	1,125	625
Ellsworth County:		
Lorraine	1,800	1,875
Other pools	1,110	1,025
Rice-Barton counties:		
Bloomer	1,700	2,375
Chase	3,675	4,775
Geneseo	2,275	2,300
Raymond	650	825
Silica	9,575	11,625
Silica—South	2,475	2,025
Keesling	875	750
Wherry	2,675	3,425
Miscellaneous Barton	3,755	4,820
Miscellaneous Barton	3,775	4,820
Russell County:		
Fairport	2,075	1,980
Gorham	1,485	1,460
Russell	1,075	1,040
Sullivan	4,760	5,750
Trapp	6,280	8,410
Miscellaneous Russell	6,425	7,475
Sedgwick County:		
Valley Center	1,030	1,005
Miscellaneous	2,845	2,890
Ellis County:		
Bemis	3,350	6,725
Miscellaneous	3,470	2,185
Kingman County	580	550
Stafford County	3,915	2,885
Greenwood County	9,050	9,200
Butler County	14,555	14,750
Other fields	22,660	22,730
Total Kansas	143,150	152,975

Barton County

Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE section 16-16-11w, a wildcat in northeastern Barton County, was abandoned as a failure at 3,344 feet. Siliceous lime was topped at 3,322 feet. A small showing of oil and 2,000 feet of water in the hole resulted in a plug back to 3,333 feet. It was acidized with 1,000 gallons but the best performance of the well was 58 bbls. of oil and 212 bbls. of water in a six-hour test.

Western Kansas Oil & Refining Co. and Republic Natural Gas Co. No. 1 Linser, SW SW SE section 3-17-13w, topped Siliceous lime at 3,362 feet, total depth 3,367 feet. It was given a 1,000-gallon acid treatment, and produced 194 bbls. the first four hours and 197 bbls. the following four hours, and won a potential rating of 1,166 bbls. a day. The oil grades 37.9 degrees A.P.I.

Thayer Drilling Co. No. 1 Soderstrom B, SW SW NE section 21-17-13w, topped Siliceous lime at 3,440 feet, total depth 3,462 feet. It was not acidized, but produced 80 bbls. the first four hours and 76 bbls. the next four hours, and was rated at 458 bbls. per day of 37-gravity oil.

Gulf Oil Corp. No. 3 Spanier, NE NE NW section 12-20-11w, topped Siliceous lime at 3,272 feet, total depth 3,283½ feet. It was given a 2,000-gallon acid treatment and pumped 216 bbls. of oil the first four hours and 192 bbls. the next four hours, making a potential of 1,149 bbls. per day.

Atlantic Refining Co. No. 1 Sullivan, SE NE SW section 29-17-13w, an old well plugged back from 3,398½ feet, and shot with 30 quarts at 3,190-3,205 feet, showed only water, and was abandoned.

Indian Territory Illuminating Oil Co. No. 1 Rose Bryant-B, NE NE NW section 26-20-11w, had Siliceous lime at 3,265-67 feet, total depth 3,271 feet. It was acidized with 1,500 gallons and produced 320 bbls. in eight hours. It was then drilled to 3,293 feet with no increase in oil and again acidized with 2,000 gallons. The well produced 224.56 bbls. the first four hours and 238.04 bbls. the second four hours, and was given a potential of 1,347 bbls. a day.

Kessler Oil & Gas Co. and others No. 1 Dirks, NW NW NE section 14-20-16w, was dry and abandoned at 3,836 feet. Siliceous lime was topped at 3,786 feet. It showed no signs of oil.

Stafford County

Sinclair Prairie Oil Co. No. 1 Mena Bunselmeyer, SE NE SE section 36-21-13w, Stafford County, was a 52-bbl. well after a 3,500-gallon acid treatment at 3,657-63 feet.

Stanolind Oil & Gas Co. No. 1 Frank Hitz, NW SW NW section 2-22-12w, was abandoned at 3,631 feet. Siliceous lime was topped at 3,610 feet, total depth 3,631 feet. It was acidized with 300 gallons, 600 gallons and 1,100 gallons, but made only a small production of oil, ending up with 2,500 feet of water in the hole.

Stanolind Oil & Gas Co. No. 3 Mary Hartnett, NE NE SE section 23-24-11w, is a Misener sand producer with a potential of 1,553 bbls. per day. Top of the Misener was found at 3,809 feet, total depth 3,821 feet. It flowed naturally, making 259 bbls. the first four hours and 260 bbls. the second four hours through 3-inch tubing. There was no water.

Ellsworth County

Cities Service Oil Co. and others No. 1 Splitter, 440 feet from west and 1,320 feet from south lines of SE quarter section 20-17-9w, Ellsworth County, was abandoned at 3,272 feet. Siliceous lime was found at 3,265 feet. It showed only water.

Cities Service Oil Co. and others No. 1 Ploog-B, C NW quarter section 32-17-9w, was a failure at 3,320 feet. Siliceous lime was topped at 3,260 feet. Drill stem tests brought up only mud and water.

Marion County

Western Kansas Oil & Gas Co. No. 1-A Melcher, 1,070 feet south and 450 feet east of NW cor. section 7-19-13, Marion County, an old well deepened from 2,445 feet to 2,827 feet, was acidized in Viola lime topped at 2,813 feet, and made a 176-bbl. well initially.

Reno County

Albert Jones and others No. 1 Shepherd, wildcat, NW NW NW section 22-26-9w, Reno County, made a potential production of 173 bbls. of oil, but with a lot of water, producing from Kansas City lime at 3,535-38 feet.

Woodson County

Barner & Leiker and others No. 1 Knapp, 550 feet from south and 870 feet from west lines of NW quarter section 27-22-14, Woodson County, was dry and abandoned at 555 feet.

W. C. Cohen and others No. 1 Pendlay, NW NW SW section 5-26-15, a wildcat, was dry and abandoned at 1,666 feet. It got a hole full of water from Bartles-

(Continued on Page 82)

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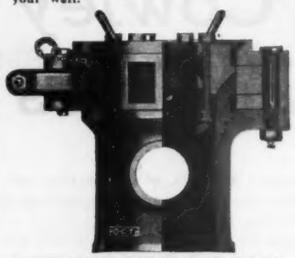

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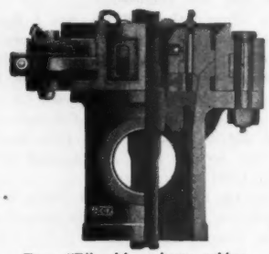

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T-72

Among the Drilling

DAVIDSON DRILLING CO. has contracted three wells for Skelly Oil Co. Two are in the large and expanding Wasson pool of Yoakum County, West Texas, and the other is a wildcat in Hockley County. The Hockley County test is No. 1 Elwood Estate, in the Howard C.S.L. Survey, League 15. It was drilling below 3,150 feet, having been spudded June 5.

PARKER DRILLING Co., of Tulsa, which recently opened a branch office in Fort Worth, Tex., to care for the company's business in Texas, is now drilling several wells in the Permian Basin area. The company's activity has expanded into Crane, Ector and Howard counties of West Texas and over into Lea County in New Mexico. All of the wells now being drilled are in proven fields, but several contracts for wildcat tests are to be announced soon.

OLSON DRILLING CO. has taken over the H. S. Forgeron No. 1 Lockhart & Brown wildcat about 5 miles west of the Fuhrman pool in Andrews County, West Texas. This is one of the more important wildcats drilling in the district and gives promise of opening a new producing area for the county. The test made several flows of oil from different horizons during the course of drilling to 4,483 feet. It was deepened and was last reported testing a saturated zone at 4,584 feet.

A. O. Olson alighting from plane after trip to Lexington, Ky.

MANAHAN DRILLING CO. of Tulsa is preparing to set whipstock to drill past 100 feet of drill pipe in a well for Sinclair-Prairie Oil Co. in section 35-6s-2w, Love County, Oklahoma. Drill pipe had been stuck for more than two months at a depth of 5,980 feet; for five weeks an attempt was made to get it out by circulating before resorting to cutting out operations; after removing all but 100 feet of drill pipe and cementing the bottom of the hole, the first attempt to set the whipstock encountered difficulties owing to the whipstock sticking in the hole, necessitating cutting out the drill pipe a second time, before making a second attempt to set whipstock.

DAVID JERAULD (JERRY) OVEN, of Enid, Okla., is drilling a test for Champlin Refining Co. in section 4-24n-8w, Garfield County, 50 miles northwest of Enid, which will be drilled to a depth of 6,600 feet (Wilcox) unless production is found. At 950 feet the well was shut down temporarily because of the necessity of title correction.

CORBETT-BARBOUR DRILLING CO., of Tulsa, was rigging up in the latter part of June to drill to 3,200 feet on the Kewanee-Badger lease between Pampa and Borger near the line between Gray and Hutchinson counties in the Texas Panhandle.

GLENN CAMPBELL, of Tulsa, has contracted for Campbell Drilling Co. to drill 20 turnkey wells for Shell Petroleum Corp. to depths in the vicinity of 3,400 feet in the Trapp and Geneseo pools in Kansas. He has also contracted to have Glenn Drilling Co. drill 15 wells for Indian Territory Illuminating Oil Co. in the Silica-South pool of Barton and Rice counties; the Trapp pool of Barton County, and the Stoltenberg pool of Ellsworth County. The wells will be drilled to an approximate depth of 3,375 feet to the Arbuckle lime. I. T. I. O. holds leases on about 2,100 acres in the Silica-South pool, 240 acres in the Stoltenberg pool. Rigging up or drilling is proceeding at two locations for Shell and two locations for I.T.I.O.; altogether five rigs are being used.

CALIFORNIA COMMERCIAL DRILLING CO., headed by William Walker, president, is nearing completion on a well being drilled for Pasadena Oil Co. in section 28-30-22 of the old McKittrick field. The same

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company is working on two wells for Midway-Peerless Oil Co. in section 15-31-22 of the Midway-Maricopa field.

JOHN E. MABEE, Tulsa drilling contractor, is nearing completion on his third well drilled for E. H. Moore, Inc., in the Santa Maria Valley field of California. A purchased-power electrical rig is in use, since gas in this area is expensive for steam generation, and difficulty is had with the hard water available in the field.

JOHN GAMBA, California drilling contractor, just completed a 1,590-foot well for Shamrock Oil Co. in the exceptionally good time of nine days. The well is located on the edge of the Coffee Canyon field in section 6-28-29. Its initial production was reported by L. W. Hunt, superintendent for Shamrock Oil Co., as 125 bbls. per day.

ALLEN AND MORRIS have apparently opened a field in Refugio County, as a drill stem test on No. 1 Rooke, showed 400 pounds of working pressure and a slight showing of distillate. The test was made at 5,382-93 feet, in the upper section of the Frio formation and the hole is being cored deeper. The well is being drilled for I. J. Allen, and is about 4 miles south of the town of Woodsboro. In the same county and in the Refugio field, W. R. R. Oil Co. No. 2 Mission River has been spudded. Other operations are reported at the West Saxet field for Rutherford Oil Corp. while at the Luby field, two rotaries are operating for Seaboard Oil Corp.

TRINITY DRILLERS continue testing Coastline Oil Corp. No. 1 State, a wildcat about a half mile offshore from Nueces County in Redfish Bay. Drilling has started on Phillips Petroleum Co. No. 1 McCright and No. 2 Smith in Nueces County while in Duval County one rotary is running for W. G. Graf on the Vaello Survey.

ROWAN & HOPE has a contract from Arkansas Fuel Oil Co. for a second test to be drilled in the recently opened Cuellar field, Duval County, and drilling was started last week. In the LaReforma area, Starr County, Wheelock & Collins No. 1-A Francisco Guerra is drilling in sand and shale showing oil at 6,659 feet, and the well is looked upon as a possible pool opener.

JACK FRAZIER is moving one of his rotaries to Fort Bend County, Texas, where he will drill a projected 6,500-foot wildcat for himself. The well is on Baker and others lease in Barrett and Harris surveys, midway between the Pilant Lake and Rabbs Ridge prospects. Drilling has been started on his wildcat in Goliad County, while at the Eureka field, Harris County, he is starting another well after completing his No. 3 Hogg as one of the best producers in the field.

RUTHERFORD DRILLING CO. received contract from Skelly Oil Co. for a test to be drilled in the active Fairbanks field, and drilling is expected to be started during the week. Two rotaries are operating in the Van Vleck field for the same company, while at the Turkey Creek field, Nueces County, drilling operations were started on Rutherford Oil Corp. No. 2 McKinzie.

SMITH & McDANNALD are preparing to complete Tide Water Associated Oil Co. No. 1 Laura Lackner, which is expected to provide a southwest extension to the Eureka field, Harris County. The hole is bottomed at 7,800 feet, with oil sand logged in a core from 7,730-50 feet.

NICKLOS DRILLING CO. opened production on the west flank of the Lockport field with the completion of its joint test with Continental Oil Co. drilled on the J. H. Moss lease. The well was completed through perforated casing below 5,300 feet and is reported to have made an initial production of 280 bbls. daily. A protection string of 9⅝-inch casing is being cemented in Continental Oil Co. No. 1 Joe Sturdivant, drilled to a total depth of 9,825 feet. Drilling continues for the same company with three rotaries at the Villa Platte field, Evangeline Parish, while at the Valentine field, one operation is reported for Pan American Production Co.

PAYNE DRILLING CO. has spudded O. W. Killam and others No. 1 Dodd, in the Ogburn prospect, Harris County, about a mile south of a recent dry hole in the W.C.R.R. Survey.

There were 36 locations reported for the Texas Coast the past week, an increase of 16 over the previous week. Of the new locations, one can be classified as a wildcat. It is J. K. Dorrance No. 1 Guethlein, in the Morris & Cummings Survey in the Mauritz area, Jackson County.

TAUBERT & McKEE, who center most of their activity in the West and West Central Texas areas, are drilling an important Throckmorton County wildcat for Halls Refining Co. 1 mile north of Woodson. The test was drilling below 2,480 feet.

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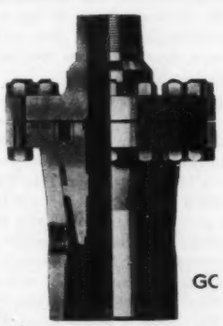

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Widely Scattered Louisiana Wildcats Showing Favorably

HOUSTON, Tex., July 4.—Interest in the Gulf Coast district was centered on the Coastal Louisiana sector where several widely scattered wildcats were showing for pool openers and prospects were favorable for new sands being opened in proven fields.

In the southern part of the Plaquemines Parish, on the Bird Island prospect, Gulf Oil Corp. No. 1 Grand Prairie Levee District was running an electrical survey after an unsuccessful drill-stem test showed approximately 5 gallons of 27.2-gravity oil. The test was attempted at 6,120 feet, but the testing tool slipped to 6,132 feet. The hole is bottomed in a broken sand section showing oil and gas cored from 6,048 feet to 6,151 feet, total depth. A previous showing was logged at 5,682-87 feet. The well is on a geophysical prospect in section 6-20s-19e.

In the Hester area, St. James Parish, Continental Oil Co. was fishing for stuck drill stem in No. 1 Realty Operators after an attempted blowout at 7,499 feet, total depth. Hard formation was drilled out of at 7,495 feet, and the well started flowing gas after drilling sand to total depth. Sand with oil and gas shows have been logged at intervals from 6,797-6,803 feet and at 6,888-6,903 feet. This structure was proven a salt dome last year by Shell Petroleum Corp. and No. 1 Realty Operators is one of two tests being drilling simultaneously by the company. It is in section 17-12s-17e.

At the West Gueydan prospect, Vermilion Parish, Magnolia Petroleum Co. was drilling plug preparatory to testing No. 1 Ferguson which last week showed evidence of distillate production. The hole is bottomed at a plugged-back depth of 7,200 feet, and 7-inch casing was cemented at 7,130 feet.

Approximately 4,000 feet west of the Pan American Production Co. operation at the Valentine field, Lafourche Parish, William Helis has apparently found a new sand in No. 2 Valentine Sugar, Inc., and casing is being cemented for a production test. Shale with streaks of sand showing oil was cored at 7,438-64 feet, sand with an oil show at 7,464-84 feet and sand showing oil from 7,484-7,500 feet. The well is in section 3-17s-20e, about 1,948 feet northwest of No. 1, recently abandoned due to mechanical trouble caused by heaving shale.

In the Raceland field, Lafourche Parish, Amerada Petroleum Corp. No. 2 South Coast Corp., 1,450 feet southwest of the discovery in section 34-15s-19e, is bottomed at 10,482 feet and an electrical survey was made of the hole after the well attempted to blow out while drilling at 10,407 feet. Same company's No. 1 Godchaux, same section, is bottomed at 10,703 feet, and 7-inch casing is being cemented for a production test. Both tests were drilled a few hundred feet deeper than the discovery well which was completed through perforated casing at 10,183-207 feet.

Preparations were being made by Gulf Oil Corp. for a production test of No. 4 State QQ, which is bottomed at 10,950 feet with 5-inch casing cemented at 10,928 feet. Sandy shale with a good oil odor was cored at 10,737-823 feet, and the section is expected to be tested through perforated casing. Several other sands showing oil have been logged below the discovery horizon at 8,144-8,204 feet. This is the second well to be drilled in the field which is in section 17-19s-17e.

In the North Crowley field, Humble Oil & Refining Co. was preparing to test a shallow sand cored in No. 3 Federal Land Bank, section 34-8s-1e. The hole was plugged back from a total depth of 9,143 feet to 7,359 feet, and the test will be made from 7,194-7,210 feet. If productive the well will open the third sand in the field. The discovery horizon is topped to 8,100-8,200 feet and a recent completion was made in a shallower sand at 7,747-51 feet. In the recently opened South Crowley field, Humble Oil & Refining Co. is preparing to recomplete the discovery well in a shallow sand at 6,900 feet. The well was originally completed as a small producer through perforated casing at 7,311-13 feet, but continued to make a large per cent of salt water.

W. T. Burton has derrick up for his second wildcat in Orleans Parish. The well is on the R. E. E. de Montluzin lease in section 1-10s-13e, approximately 6,600 feet due west of No. 1 State Lake Pontchartrain, spudded last week. Locations for both wells were made following several months of geophysical work.

Stanolind Oil & Gas Co. made location for its fourth well at the South Elton distillate field, Jefferson Davis Parish. It is on the O'Neil Smith lease in section 29-7s-3w, approximately a quarter of a mile northwest of previous development which resulted in the discovery and the drilling of dry holes, one drilled below 13,000 feet.

Continental Oil Co. opened production on the west flank of the Lockport field, Calcasieu Parish, with the completion of No. 1 J. H. Moss. The well is flowing 285 bbls. per day through a quarter-inch choke with tubing pressure 700 pounds. The completion was made through perforated casing slightly below 5,300 feet.

Along the Texas coats, Magnolia Petroleum Co.'s West Ranch prospect, Jackson County, was opened as a dry gas field with completion of No. 2-A West which flowed 1,121,000 feet of gas and 100 bbls. of wash water per day through a 5/32-inch choke with tubing pressure 1,800 pounds and casing pressure 1,900 pounds. The well is flowing through perforated casing at 5,085-89 feet. Location is in the Ramon Musquiz Survey. In the same county, in the Mauritz area, J. K. Dorrance is spudding No. 1 F. J. H. Guethlein in the Morris and Cummings Survey No. 20.

The first production test to be made on Union Producing Co. No. 1 Goodykoontz, 1¼ miles northeast of the Fairbanks field, Harris County, tested salt water and prospects of opening production from another sand is not encouraging. Casing was perforated at 7,472-80 feet and the well showed no pressure. The perforations have been squeezed off and another sand below 6,800 feet is scheduled to be tested. Only one completion and three locations were reported for the field. The completion was made by Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 J. F. Sebek which flowed 214 bbls. per day from perforated casing at 6,832-42 feet.

A slight southwest extension to the Eureka field, Harris County, was indicated as Tide Water Associated Oil Co. prepared to complete No. 1 Laura Lackner. The hole is bottomed in salt water sand at 7,800 feet and 5½-inch casing is being cemented for completion at 7,730-50 feet, where 5 feet of oil sand was cored. Jack Frazier No. 2 Varner Realty Co. and Means & McGehee are starting drilling operations on two tests after completing two nice producers.

N. W. Hunter No. 2 Aaron Cohen, west of production in the Hitchcock field, has made a cement squeeze job, after the well flowed an unestimated amount of fluid, of which 80 per cent was salt water from perforated casing at 5,146-52 feet. The well is 1,400 feet west of Maco Stewart No. 2 fee, and is reported to have cored approximately 30 feet of sand of which the lower 10 feet was salt water sand.

In the Bay City field, Matagorda County, Atlantic Refining Co. was running an electrical survey of No. 1 Gola, at a total depth of 8,253 feet, after sand and sandy shale showing oil was cored from 8,130-8,209 feet. The Marginulina was topped at 7,516 feet. To the southeast at the Palacios field, Bennett Oil Corp. has abandoned No. 1 Foley at a total depth of 9,360 feet, after the well attempted to blow out. It is a north offset to Atlantic Refining Co. No. 3 Foley in the Lewis Goodwin Survey. On the Citrus Grove Prospect, Sun Oil Co. abandoned No. 1 Fred Robbins after a series of drill-stem tests through perforated casing at 8,300 to 10,030 feet showed nothing but salt water with slight showing of oil and gas. Bottom of the hole is 10,160 feet.

Jack Frazier has made tentative location for a 6,500-foot wildcat to be drilled in the Barrett & Harris Survey, about midway between the Pilant Lake and Rabbs Ridge prospects.

In the Clam Lake field, Jefferson County, a faulty cement job has retarded completion of Shell Petroleum Corp. No. 2 McFaddin, the second well to be drilled, which last week proved this structure a deep seated salt dome. The hole was plugged back from a total depth of 8,189 feet to 5,659 feet where casing was cemented. A drill-stem test through perforations at 5,552-55 feet tested 5 pounds of pressure in eight minutes. The perforations have been squeezed off and the hole has been plugged back to 5,545 feet.

Glenn H. McCarthy No. 1 Simon Oliver provided an interesting completion in the Hardin field, Liberty County, when it flowed 165 bbls. per day on a potential test through a 9/64-inch choke. It is producing through perforated casing at 7,630-48 feet, and has a tubing pressure of 1,700 pounds and casing pressure 2,425 pounds. The well is in the southern part of the north Hardin area and is expected to result in an extensive drilling campaign in this area heretofore thought to be too high structurally to produce oil.

COMPLETIONS ON TEXAS COAST

Brazoria County

Hastings field: E. M. Hailey, sand 6,094-6,104 feet, 598 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 5-A W. H. Avitts, perforated casing 6,038-78 feet, 490 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 22 Drake, perforated casing 6,000-41 feet, 565 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 24 Steve Paul, perforated casing 5,620-78 feet, 623 bbls., quarter-inch choke. Manvel field: Texas Co. No. 19-A W. T. Belcher, sand 5,655-75 feet, 537 bbls., quarter-inch choke.

Chambers County

Barbers Hill field: Atlantic Refining Co. No. 2 Traverso, perforated casing 5,595-5,616 feet, 453 bbls., quarter-inch choke. Seabreeze field: Sun Oil Co. No. 1-C R. M. White, 9,056 feet, abandoned.

Galveston County

Dickinson field: Ben Oil Co. No. 2 Sam Levine, perforated casing 8,087-98 feet, 648 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 3 R. B. Peters, 8,952 feet, abandoned. Pure Oil Co. No. 5 Sam Levine, perforated casing 8,062-86 feet, 667 bbls., quarter-inch choke.

Harris County

Silsbee field: Republic Production Co.-Houston Oil Co. No. 1 J. W. Frazier, 6,910 feet, 298 bbls., three-sixteenths inch choke. Eureka field: J. Frazier No. 3 Vollmer Neiman, perforated casing 7,725-35 feet, 27 bbls. per hour, quarter-inch choke. Means & McGehee No. 1-A Laura Lackner, perforated casing 7,687-7,702 feet, 685 bbls., quarter-inch choke. Fairbank field: Amerada Petroleum Corp.-Stanolind Oil & Gas Co. No. 1 J. F. Sebek, perforated casing 6,832-42 feet, 214 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 3 Cottingham, sand 5,968-6,045 feet, 568 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 1 J. D. Owens, sand 5,711-6,049 feet, 611 bbls., quarter-inch choke. Humble field: Wilson Oil Co. No. 12 H. C. House, perforated casing 3,614-67 feet, 122 bbls., 12 hours quarter-inch choke. Pierce Junction field: Superior Oil Co. of Oklahoma No. 6-B J. J. Settegast, 4,547 feet, 191 bbls., pumping. Tomball field: Humble Oil & Refining Co. No. 1 Keystone Oil Co. perforated casing 5,579-82 feet, 316 bbls., quarter-inch choke.

(Continued on Page 82)

Rocky Mountain Area

By
T. R. INGRAM

Clay Basin Gas Field, Utah, Is Extended One Mile East

DENVER, Colo., July 4.—The Murphy Oil Co. No. 12 Holst, Quealy field, Wyoming, which extended the proven area one location north, was completed in the Dakota for 5 bbls. per hour. The Sand Creek Oil Co. No. 1 Prokesh, in the Shawnee district, is estimated at 10,000,000 feet from the contact at 633 feet.

There were no completions or new operations in Colorado.

The Cut Bank field in Montana had one completion and three new operations, the Glacier Production Co. No. 4 Coburn swabbing 145 bbls. in 15 hours. Kevin-Sunburst had one average completion and one new operation.

The Clay Basin gas field in northeastern Utah was extended 1 mile to the east in the Mountain Fuel Supply Co. No. 3-B Murphy, completed in the Dakota for 16,000,000 feet.

The Continental Oil Co. completed a 38-bbl. well at 884 feet on the Rattlesnake dome in northwestern New Mexico, in the Dakota.

NEW MEXICO

Only three wells were completed in Lea County in the past week. Stanolind Oil & Gas Co. No. 2-B Farnsworth, C W half NE SW section 7-26-37, found the top of the gas pay at 2,846 feet and drilled to 2,995 feet. The well produced 13,920,000 feet of gas the first day.

Repollo Oil Co. No. 1 State 197, SE SE SE section 6-17-34, is a 312-bbl. well. It had been drilled to 5,016 feet, and plugged back to 4,685 feet and a pay topped at 4,644 feet was tested. The well flowed 95 bbls. in seven hours.

Phillips Petroleum Co. No. 6 Santa Fe, C SW SE section 21-17-35, found pay at 4,350 feet and drilled to 4,640 feet. The well swabbed and flowed 485 bbls. in 24 hours.

In Eddy County, Flynn, Welsh & Yates Oil Co. completed two wells. No. 9-A Gissler, C SE NE section 14-17-30, made an initial production of 57 bbls. through open 2½-inch tubing, after it had been acidized and shot. Top of the pay was 3,760 feet, total depth 3,500 feet. No. 8-A Gissler, NE NW NE section 23-17-30, flowed 105 bbls. through casing the first 24 hours from pay topped at 3,312 feet, total depth 3,474 feet.

New work in Lea County included Magnolia Petroleum Co. No. 1 Corrigan, C SW SE section 33-21-37, cellar and pits; Texas Co. No. 4-O State, C NE SE section 36-17-34, a location; Texas Co. No. 5-O State, C SE NW section 36-17-34, location; Texas Co. No. 6-O State, C NW section 36-17-34, a location; Amerada Petroleum Corp. No. 3 State, C NE SW section 23-17-34, drilling at 235 feet; Magnolia Petroleum Co. No. 1-L State, C SE SW section 21-27-35, cellar and pits; Anderson & Prichard No. 1 Stuart, C W half SW NE section 10-25-37, set casing at 1,177 feet; Continental Oil Co. No. 1 Elliott, C NE NE section 17-22-37, cellar and pits; Parker Drilling Co. No. 1-A State, C SW SW section 21-22-37, spudded; Gulf Oil Corp. No. 5 McCormack, C SW NE section 32-21-37, location; Great Western Producers No. 1 Leonard, C SE NE section 32-23-37, location.

In Eddy County, Harry Leonard was drilling at 175 feet in No. 1 Texas, NW NW NE section 36-16-31.

Lea County

Addison Oil Co. No. 2 Knight, C SW NW sec. 27-24-37. Drlg. 3,538 ft.; F. by heads; est. 20 B.O. each head.

Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,855 ft.; set 8-in. 2,573 ft.

Amerada Pet. Corp. No. 3 State, C NE SW sec. 23-17-34. T.D. 235 ft.

Anderson-Prichard Oil Corp. No. 2 Carlson-Harrison, NW NE SE sec. 22-25-37. Loc.

Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,420 ft.

Anderson-Prichard Oil Corp. No. 1 Stuart, C W½ SW NE sec. 10-25-37. T.D. 1,177 ft.; W.O.C.

Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-25-37. Drlg. 3,610 ft.

Anderson-Prichard Oil Corp. No. 2 Wells, C SW SE sec. 5-25-37. Drlg. 3,303 ft.

Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.

Continental Oil Co. No. 1 Elliott, C NE NE sec. 17-22-37. C. & P.

Continental Oil Co. No. 1 State K-29, C SW SW sec. 29-16-37. Drlg. 3,356 ft.

Continental Oil Co. No. 4-E-17 State, C SW NW sec. 17-22-36. T.D. 3,880 ft.; P.B. 3,850 ft.; reshot at 3,751-3,850 ft.; F. 2½ B.F.P.H., 30 per cent wtr.

Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.

Culbertson & Irwin No. 1 Dabbs, NE NE NW sec. 35-25-37. T.D. 3,284 ft.; W.O.C.

Culbertson & Irwin No. 1 Henry, C N½ NW SW sec. 26-25-37. Drlg. 2,895 ft.

Culbertson & Irwin No. 3 Liberty, C N½ NW SW sec. 3-25-37. T.D. 3,468 ft.; F. 55 B.O. in 6 hrs.; shot; tstg.

A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. T.D. 3,373 ft.; flwd. 15 B.O.P.H. at 3,321 ft.

J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.

Great Western Prod. Co. No. 1 Leonard, C SE NE sec. 32-23-37. Loc.

Great Western Prod. Co. No. 1-C State, C NE SW sec. 7-19-37. Drlg. 4,060 ft.; S.O.

Gulf Oil Corp. No. 1 Alley, C NE SE sec. 10-23-37. T.D. 3,713 ft.; P.B. 3,688 ft.; S.D.O.

Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.

Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. T.D. 4,155 ft.; P.B. 4,100 ft.; shot and C.O. at 4,032 ft.

Gulf Oil Corp. No. 5 McCormack, C SW NE sec. 32-21-37. Loc.

Gulf Oil Corp. No. 3 Ramsey, C SW SE sec. 35-21-36. T.D. 1,420 ft.; W.O.C.

Gulf Oil Corp. No. 4 Stuart, C NW NE sec. 10-25-37. Drlg. 1,503 ft.

Humble O. & R. Co. No. 6 Fopeano, C NE NE sec. 35-20-36. Drk.

Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.

Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.

Magnolia Pet. Co. No. 2 Brunson-Argo, C NE NE sec. 9-22-37. Drlg. 2,445 ft.

Magnolia Pet. Co. No. 1 Corrigan, C SW SE sec. 33-21-37. C. & P.

Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.

Magnolia Pet. Co. No. 1-L State, C SE SW sec. 21-17-35. C. & P.

Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flwd. 51 B.O. in 1 hr. naturally.

Magnolia Pet. Co. No. 3 State-Bridges, C NE NW sec. 26-17-34. Drlg. 2,220 ft.

Magnolia Pet. Co. No. 6 State-Bridges, C SW NW sec. 23-17-34. T.D. 4,755 ft.; pay 4,618 ft.; tstd. 50 B.O. for 1 hr. and died; flwd. 15 B.O., 10 min. and died.

Magnolia Pet. Co. No. 9 State-Bridges, C SE SW sec. 13-17-34. Drlg. L. 4,250 ft.

Magnolia Pet. Co. No. 10 State-Bridges, C SE NW sec. 25-17-34. Drlg. 3,965 ft.

Magnolia Pet. Co. No. 11 State-Bridges, C SE NW sec. 25-17-34. Drlg. 3,805 ft.

Magnolia Pet. Co. No. 12 State-Bridges, C SE SE sec. 26-17-34. T.D. 832 ft.; W.O.C.

Maljamar O. & G. Co. No. 9 Baish, C NW NW sec. 21-17-32. Drlg. 4,116 ft.

Maljamar O. & G. Co. No. 10 Baish, C SW NW sec. 22-17-32. Drlg. 3,824 ft.; S.O.&G.

Maljamar O. & G. Co. No. 4 Mitchell, C NE NE sec. 20-17-32. Drlg. 3,937 ft.; S.O.

Maljamar O. & G. Co. No. 5 Mitchell, C NW NW sec. 19-17-32. Drlg. 3,500 ft.

Jas. A. Mascho No. 2 Cloyd, C SW SW sec. 20-22-33. Drlg. 625 ft.

C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.O.

Mid-Continent Pet. Corp. No. 3 Marshall, SW SW SW sec. 12-21-36. Drlg. 1,800 ft.

National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,710 ft.

Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,625 ft.

Ohio Oil Co. No. 1 State-Fleming, NE cor. sec. 2-26-37. T.D. 3,331 ft.; top pay 3,268 ft.; flwd. 30 B.O. in 8 hrs.; P.O.P.

Ohio Oil Co. No. 1 State-McCallister, C SE SW sec. 25-17-34. Drlg. 4,070 ft.

Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.

Parker Drlg. Co. No. 2 Irwin, C W½ NW SW sec. 35-24s-37. Drlg. 3,290 ft.

Parker Drlg. Co. No. 1-A State, C SW SW sec. 21-22-37. Spdg.

Paton Bros. No. 2 Wilkinson, C SE SE sec. 8-18-31. Loc.

Penrose & Rowan No. 1 Christmas, SE cor. sec. 28-22-37. Drlg. 1,305 ft.

Lem Peters No. 1 T. O. May, C NW NE sec. 34-22s-37. T.D. 3,700 ft.; flwd. 18 B.O.P.H. for 2 hrs.

Lem Peters No. 2 L. J. May, C W½ SE SE sec. 27-22-37. Drlg. 1,145 ft.

Phillips Pet. Co. No. 3 Santa Fe, C SW NW sec. 5-18-35. C. & P.

Phillips Pet. Co. No. 7 Santa Fe, C SE SW sec. 27-17-35. T.D. 3,157 ft.

Phillips Pet. Co. No. 8 Santa Fe, C NW NW sec. 5-18-35. T.D. 570 ft.; S.D.; wtr.

Phillips & Pure No. 2 Woolworth, C NE SE sec. 33-24-37. T.D. 3,345 ft.; drlg. plug.

Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.

Repollo Oil Co. No. 2 Hair, NW SW NW sec. 9-24-37. T.D. 3,380 ft.; blew out; est. 20,000,000 ft. sweet gas.

Repollo Oil Co. No. 2 Turner, SW NE SW sec. 29-21-37. T.D. 750 ft.; U.R.

Repollo Oil Co. No. 5-B Whitten, NW NW NE sec. 4-24-36. Drlg. 3,580 ft.; S.S.O.&G.

Republic Prod. Co. No. 1 State, C NW SW sec. 32-17-35. Cg. 4,185 ft.; S.S.O. 4,405 ft.

Republic Prod. Co. No. 2 State, C SW SW sec. 32-17-35. Loc.

Rowan & Nichols No. 1 State, C NE NW sec. 22-10-37. Drlg. 3,935 ft.

Rowan Drlg. Co. No. 2-A Elliott, C NE SW sec. 27-22-37. Drlg. 3,411 ft.

J. M. Rush No. 2 State, NW NW SE sec. 20-20-37. R.U.R.

J. M. Rush No. 2 Wantz, C NW SW sec. 21-21-37. Drlg. 3,653 ft.

Harry J. Schafer No. 1-A State, C E½ NW NE sec. 26-20-36. T.D. 3,865 ft.; swb. some oil; P.B. 3,845 ft.; S.I.

Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. T.D. 3,155 ft.; drlg. by tools at 3,132 ft.

Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.

Shell Pet. Corp. No. 2-C State, NE SE NE sec. 24-21-35. T.D. 3,786 ft.; drlg. plug.

Shell Pet. Corp. No. 3-A State, C SE NE sec. 31-17-35. Drk.

Shell Pet. Corp. No. 1-D State, C SW SW sec. 31-17-35. C. & P.

Shell Pet. Corp. No. 1 Whitten, C S½ SE NE sec. 33-23-36. Drlg. 43 ft.

Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.

Skelly Oil Co. No. 7 Coats, C NW SW sec. 3-24-36. T.D. 3,540 ft.

Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.

Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.

Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 425 bbls. in 24 hrs.

Stanolind O. & G. Co. No. 3-A Hill, SE SE NW sec. 6-21-37. Drlg. 3,530 ft.

Stanolind O. & G. Co. No. 5-B Myers, C NE SW sec. 9-24-37. T.D. 3,530 ft.; est. 16,000,000 ft. gas treated; now S.I.O.

Stanolind Oil Co. of Texas No. 1 State, C SW NW sec. 32-17-35. Drlg. 3,590 ft.

W. H. Street No. 2 Farrell, C NW SE sec. 22-22s-37. T.D. 3,689 ft.; S.G. 3,460 ft.; S.O. 3,535 ft.; ran 2-in. to 3,687 ft.; flwd. into pits.

Texas Co. No. 3 Black, C NW NE sec. 21-24-37. T.D. 3,450 ft.; S.D.O.; hole caving.

Texas Co. No. 2 Cagle, SW NE NW sec. 9-26s-37. W.O.C. 1,047 ft.

Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. T.D. 5,117 ft.; P.B. 4,259 ft.; swbd. 52 B.O. in 12 hrs.; to test.

Texas Co. No. 3 J. S. Lea, SW NE SW sec. 14-20-34. Drlg. 1,477 ft.

Texas Co. No. 1-N State, C SW SW sec. 30-17-35. C.O. to 4,747 ft.; P.B. 4,700 ft.; S.D.O.

Texas Co. No. 2-D State, C SW NW sec. 27-17-34. Drlg. wtr. well; drlg. 4,266 ft.

Texas Co. No. 1-Q State, C SE SE sec. 25-17-34. Drlg. 3,660 ft.

Texas Co. No. 2-Q State, C SW SE sec. 25-17-34. T.D. 4,750 ft.; swbd. through casing; to test.

Texas Co. No. 4-O State, C NE SE sec. 36-17-34. Loc.

Texas Co. No. 5-O State, C SE NW sec. 36-17-34. Loc.

Texas Co. No. 6-O State, C NW SE sec. 36-17-34. Loc.

Twin Drlg. Co. No. 1 Corrigan, C SW NE sec. 4-22-37. T.D. 3,763 ft.; W.O.C.

Twin Oil No. 1 Joyce-Pruitt, C SE SE sec. 31-21-37. T.D. 1,194 ft.; R.U.S.T.

Two States Oil Co. No. 1-B Cole, O.W.D.D., C NE NE sec. 16-22-37. O.T.D. 1,141 ft.; drlg. 3,574 ft.

Two States Oil Co. No. 2 Etcheverry, NE NW SE sec. 10-20-36. T.D. 3,886 ft.; P.B. 3,804 ft.; flwd. 10 B.O. in 14 hrs.; 1,000,000 ft. gas.

Two States Oil Co. No. 1 Hill, C SW SW sec. 31-20-38. T.D. 253 ft.; S.D.R.

Weier Drlg. Co. et al No. 1 Woolworth, NE NE SW sec. 28-24-17. Drlg. by tools at 2,775 ft.

Sam Weiner No. 1 Smith, NE cor. sec. 4-25-37. T.D. 3,055 ft.; blew out; est. 20,000,000 ft. gas; fsg. tools.

Weiner No. 1 Parcell, C SW NE sec. 8-23-28. T.D. 4,498 ft.; S.D.O.

Western Gas Co. No. 1 Matkins, C SE SE sec. 15-23-26. T.D. 3,828 ft.

Eddy County

Anderson & Prichard No. 2 Carlson, NW NE SE sec. 22-25-37. Loc.

F. E. Baker No. 1 Eddy, NE sec. 12-22-37. T.D. 2,410 ft.; S.D.O.; W.I.H.

Danciger O. & R. Co. No. 4-A Turner, C SW SW sec. 18-17-31. T.D. 3,522 ft.; S.I.

Danciger O. & R. Co. No. 1-B Turner, CEL NE SE sec. 17-17-31. Loc.

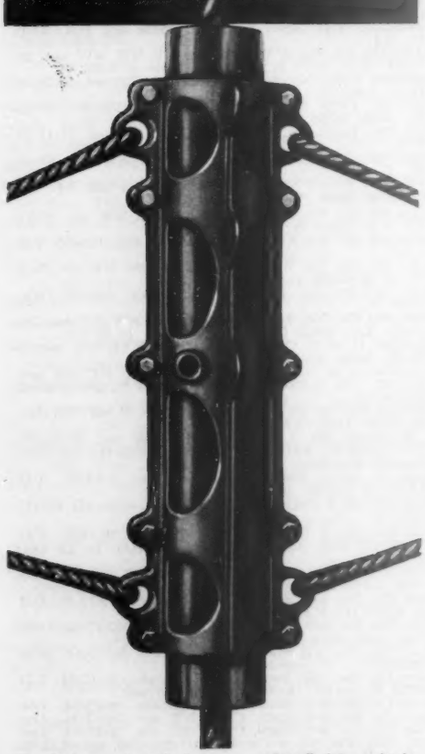
D. & B. Oil Co. No. 3 Jenkins, NE NE NW sec. 20-17-30. Drlg. 3,300 ft.

English & Harmon No. 1 Dougherty, NE NE SW sec. 3-17-27. T.D. 1,050 ft.; fsg.

Etz Bros. No. 5 State, SE NE SE sec. 16-17-30. R.U. and S.D.

Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.

Knock out the WHIP ... add 20% to their life!



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Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. T.D. 2,770 ft.; S.D.O.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 3 588 ft.; to test.
Grayburg Oil Co. No. 12 Burch, NW NW SE sec. 19-17-30. R.U. and S.D.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 2,085 ft.; S.D.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 1,980 ft.; S.D.O.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,917 ft.; S.D.R.
F. G. Keyes No. 2 State, C SE NE sec. 9-17-28. Drlg. 446 ft.
Harry Leonard No. 1 Texas, NW NW NE sec. 36-16-31. Drlg. 175 ft.
Paul Moran No. 1 Crawford & Smith, NW NW SW sec. 24-24-36. T.D. 2,005 ft.; S.D.O.
Nash, Windfohr & Brown No. 5-A Stevens, C SE SW sec. 13-17-30. T.D. 1,200 ft.; S.D.O.
Paton Bros. No. 2 Ginsberg, C SE SE sec. 8-18-31. T.D. 3,172 ft. sd.; est. 75-100 B.O.P.D.; S.I. for storage.
Premier Pet. Co. No. 1-B Maddren, NW SW SW sec. 27-17-30. Drlg. 3,020 ft.
Repollo Oil Co. No. 3-C McIntyre, NW SE NE sec. 20-17-30. Drlg. 2,975 ft.
Repollo Oil Co. No. 4-A Parke, NW SE NW sec. 22-17-30. Drlg. 3,100 ft. L.
Rudco O. & G. Co. No. 5 Yates, C NE NW sec. 33-18-28. Drlg. 2,130 ft.; S.S.O.
Paul Sarget No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
W. A. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. T.D. 3,330 ft.; S.D.O.
V. P. Welch No. 1 Lewis, SE SW SE sec. 5-16-28. T.D. 1,840 ft.; rng. csg.
Western Drlg. Co. No. 2-A Western, SE SE NW sec. 23-17-29. R.U. mach.
Yates-Dooley No. 1 Creek, C SW NE sec. 35-18-30. Spd. and S.D.R.

Chaves County

E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg. 1,935 ft.
E. J. Fisher No. 1 Foster, C NW NW sec. 7-15-26. Drlg. 30 ft.
Grastorf & Caudill No. 1 Smith, C NE NE sec. 1-4s-29. Wildcat; new hole; T.D. 3,335 ft.; W.O.C.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. sec. 15-15-30. Drlg. 600 ft.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-28. T.D. 1,000 ft.; S.D.O.

Colfax County

Winston Marks No. 1 State, SE NW sec. 5-25-24. S.D. for pipe at 1,100 ft.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W.; prep. to deepen from 5,850 ft.; S.D.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. Drlg. 38 ft.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. Drlg. 3,713 ft. L.
Fred Turner, Jr., No. 1 H. V. Everett, SE SE sec. 28-22-13. S.D. 3,710 ft.

Quay County

H. H. McGee No. 1 Chapman, sec. 9-9-35e. Drlg. 1,000 ft.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. T.D. 980 ft.; S.D.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 10-11n-4e. T.D. 3,750 ft.; M.I. 6⅝-in. and 3-in. D.P.; to resume.

McKinley County

Claude Walker No. 7 fee, SW SW SE sec. 20-20n-9w. Drlg. 250 ft.

San Juan County

The Continental Oil Co. No. 76 Rattlesnake, SW NE SE section 2-29n-19w, Rattlesnake field, was completed in the Dakota at 884 feet for 38 bbls. per day, no water.

Continental Oil Co. No. 77 Rattlesnake, NE NE NE sec. 2-29n-19w. R.U.
Goodrun & Vincent No. 2 Goodrun, SE SW NE sec. 23-29n-11w. T.D. 30 ft.; W.O. csg.
Al Greer No. 2 fee, SW SE SW sec. 10-30-11w. S.D. 660 ft. for 10-in.
Frank Lischke No. 1 Abreo, SW SW sec. 27-30n-11w. T.D. 1,460 ft.; S.W.; P.B. to 1,140 ft. to test S.G.
Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. Drlg. 1,900 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Belen Gr., SE NW sec. 16-3n-1e. T.D. 2,965 ft.; (C.D.); C.O.

Torrance County

Chief O. & G. Co. No. 1 Pace, SE sec. 12-6n-7e. Drlg. 2,045 ft.; carrying 5½-in. at 2,017 ft.; S. carbon diox. and G. at 2,022-27 ft. and 2,036-42 ft.; est. 500,000 ft.
Woolston Bros. No. 1 Garland, NE SE NE sec. 32-7n-7e. R.U.
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE sec. 32-7n-7e. Drlg. 900 ft.; 10¾-in. at 431 ft.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW sec. 23-7n-1e. R.U.R.
C. A. Grober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. T.D. 900 ft.; R.U.R.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE sec. 18-33n-1e. S.D. 303 ft. to run 10-in. and drill W.W.
Pagosa Oil & Dev. Co. No. 1 Macht, C sec. 32-36-1w. T.D. 1,455 ft.; U.R. 10-in. to bttm.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE sec. 2-19s-70w. Drlg. Pierre sh. 425 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE sec. 36-7s-88w. Drlg. 1,000 ft. after lowering 8¼-in. from 721 ft. for better csg. seat; S.O.&G. in sh.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. S.D. 3,920 ft.; will D.D. to Morrison.

Huerfano County

J. G. Tompkins & Sons No. 1 Pressey, NE NE NE sec. 10-29s-69w. S.D. 411 ft.; (prospecting for coal).
S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27s-68w. Drlg. 1,320 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW sec. 31-33n-9w. Drlg. below 700 ft.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. T.D. 4,200 ft.; rmg. at 3,870 ft.; base Mesa Verde 3,980 ft.

Moffat County

The Continental Oil Co. has acquired leases on the Bilsing and Bogenschultz ranches on the Craig dome immediately west of the town of Craig, formerly held by the Ohio Oil Co. The Ohio company drilled on the Bogenschultz lease in 1931 and brought in the discovery well for 11,000,000 feet of gas at 2,807 feet. Craig was supplied for a number of years from the well until it went to water and then the Ohio laid a line to the Continental gas wells on the Thornburg dome. The gas was in the Mesa Verde. No deep test has been drilled on the structure.

Stanolind O. & G. Co. No. 3-SD Shaw, NW NE NE sec. 27-4n-92w. T.D. 3,662 ft.; tstg.
Morapas Pet. Corp. No. 1 Coles, SW SW SE sec. 1-3n-92w. S.D. 2,690 ft.
C. R. Privett No. 1 Sutton, NE NE SW sec. 1-5n-96w. Drlg. 400 ft.; will lower 12½-in. for form. S.O.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-38s-17w. Drlg. below 4,600 ft.; 1,475 ft. in Penn. in L. and salt.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. 5,876 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW sec. 31-21s-44w. T.D. 4,070 ft.; rec. D.P.; recond. hole.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek, SW SE sec. 29-19s-64w. R.U.
C. E. Puckett No. 1 Barber, NW sec. 35-21s-66w. S.D. 475 ft.

Routt County

Craig & Moore No. 1 Erwin, C SW NE sec. 33-7s-85w. 600 ft. wtr. in Dakota 1,030-42 ft.; prep. to run csg.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW sec. 16-1n-91w. Drlg. gr. sdy. L. 2,430 ft.

WYOMING

Albany County

The Murphy Oil Co. No. 12 Holst, SE NW NE section 13-17n-77w, Quealy dome, was completed in the Dakota at 3,395-3,456 feet for 5 bbls. per hour. This is an outside well on the north and proves up one location ahead of production.

Murphy Oil Co. No. 13 Holst, SE SW NE sec. 13-17n-77w. Cmtd. surf. csg. at 140 ft.

Big Horn County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 15-1n-93w. Drlg. 536 ft.
Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. T.D. 2,420 ft.; cmtd. 10-in. on bttm.; W.O.C.

Carbon County

Cunningham Oil Co., Inc., No. 1 Union Pacific-Cronberg, SE NE SE sec. 3-23n-79w. T.D. 2,315 ft.; rng. tbg. to test.
Producers Oil Co. No. 1 Lake Valley, 200 ft. S of CNL sec. 14-20n-88w. Drlg. 1,900 ft.
Ohio Oil Co. No. 3 Hazlett Est., NE SW SE sec. 34-23n-79w. Drlg. 3,947 ft.; headed for Madison; 50 B. W.P.H. from Tensleep.
Ohio Oil Co.-California Co. No. 3 State-Griffin, C SW NW sec. 36-21n-79w. T.D. 5,711 ft.; wtr. in Sundance at 5,694-5,711 ft.; P.B. to Muddy; drlg. plug.

Converse County

The Sand Creek Oil Co. No. 1 Prokesh, NW SW SE section 29-32n-69w, in the West Shawnee district, is estimated at 10,000,000 feet of gas per day at 633 feet from sand in the base of the White River (Tertiary) formation, and is running casing to complete. This is the best well so far drilled to the contact at a shallow depth in this area. Location is 2½ miles northeast of the New Era Fuel Co. No. 2 Boot Cattle, which

made 1,500,000 feet, and the same distance west of the Wyoming Southern Oil Co. No. 1 Evert, the first oil well completed as a small producer. It is 3½ miles west of the New Era Fuel Co. No. 2 Gasper, which looks like a 50-bbl. well at 670 feet, but not yet completed. The Wyshawn Oil Co. No. 1 Lindley in section 34 is the only deep well drilling in the district. It is delayed at 1,500 feet by a fishing job.

Wyshawn Oil Co. No. 2 Lindley, C SW SW sec. 35-32n-69w. T.D. 500 ft.; fsg.
Sand Creek Oil Co. No. 1 Frokesh, NW SW SE sec. 29-32n-69w. T.D. 633 ft.; prep. to test.
Fred Bunker No. 1 Pestal, SE NE NE sec. 32-32n-69w. Drlg. 200 ft.; 10-in. at 170 ft.
New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW sec. 25-32n-69w. Est. 50 B.P.D. from sd. in base White River at 655-70 ft.; W.O. pmp.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE sec. 34-32n-69w. T.D. 1,500 ft.; fsg. bailer.

Fremont County

Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. Drlg. 3,368 ft.
Consolidated Oil Properties No. 3 Ewart, C SW SE sec. 16-1n-1w. Drlg. 834 ft.
Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33-92w. T.D. 5,320 ft.; cmtd. 5⅛-in. at 5,319 ft.; will tst. gas in 1 ft. of sd. between csg. and bttm. before perf.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.

Hot Springs County

Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE sec. 13-44n-98w. T.D. 300 ft.; R.U.C.T.
J. W. Bales No. 1 Govt., SE SW sec. 28-43n-93w. T.D. 1,082 ft.; P.B. to 1,015 ft.; tstg.
D. D. Gibson No. 26 fee, SW NW SE sec. 35-43n-93w. Drlg. 711 ft.
California Expln. Co. No. 1 Govt., NE SE NE sec. 12-44n-97w. Drlg. 3,907 ft. in new 7⅞-in. hole.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW sec. 23-21n-117w. Drlg. 500 ft.

Natrona County

Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE SW sec. 26-40n-79w. Drlg. sdy. sh. 2,794 ft.
Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW sec. 35-40n-79w. Loc.; W.O. compl. No. 26.
Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE NW sec. 35-40n-79w. T.D. 4,002 ft.; cmtd. 6⅝-in. at 3,995 ft.; tstg.

Niobrara County

C. L. Price No. 2 Lamb, C SE SW sec. 12-35n-65w. Drlg. 4,610 ft.; rng. higher than expected.
Minnelusa Oil Co. No. 2 H. & M., NW NE NE sec. 8-35n-65w. Cg. Opeche L. 4,961 ft.
Hewitt Bros. and Manning No. 1 Pecklow, SE SE SE sec. 1-35n-66w. T.D. 5,677 ft.; P.B. to tst. S.O. in Dakota.
H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. Drlg. in Sundance 937 ft.; top Morrison 587 ft.
Continental Oil Co. No. 4 Apex-2, NW NE SE sec. 34-36n-65w. Cg. hd. rd. sd. 4,911 ft.

Park County

Paul Stock No. 1 Rousseau, on the Shoshone anticline, recovered 40 feet of saturated core from the top of the Embar at 4,700-40 feet. It will go deeper. Location is northwest offset to the Ohio Oil Co. No. 1 Pulley, which made 45 bbls. per day in the same horizon when completed a number of years ago.

Valentine & Watson No. 1 Johnson, NE NE NE sec. 6-57n-99w. R.U. to D.D. from 2,452 ft.
Resolute Oil Co. No. 2 State, C SW SW sec. 16-57n-101w. Drlg. 3,640 ft.
Paul Stock No. 1 Govt., SE SE NE sec. 20-53n-101w. Drlg. 4,746 ft.

Sublet County

Texas Co. No. 3-H, NE NW NW sec. 27-27n-113w. T.D. 987 ft.; P.B. to 980 ft.; lowering 6⅝-in.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd ranch, SE SE sec. 31-31n-112w. Drlg. 100 ft.
Wyo. Pet. Corp. No. 1 Chas. Budd, C NE NE sec. 10-29n-113w. S.D. 250 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE sec. 21-28n-113w. Drlg. 832 ft.

Sweetwater County

Sinclair-Wyoming Oil Co. No. 33-A, SE SW SW sec. 11-26n-90w. T.D. 2,153 ft.; cmtd. 8¼-in. at 2,129 ft.; tstg.

Washakie County

Wyoming O. & R. Co. No. 10-B Brome, C SE NE sec. 8-47n-90w. Drlg. 1,632 ft.

Weston County

Gose Oil Synd. No. 1, NE NE NE sec. 28-47n-63w. C.O. after landing 4½-in. at 4,900 ft.
Osage Trust Co. No. 1, SE NW NE sec. 22-46n-64w. Set 500 ft. csg. through Lakota and res. to go to the Sundance.
Howland & Seneker, NE NW SW sec. 13-46n-64w. Rng. 8¼-in. through Greenhorn.
West Osage Oil Co. No. 3, SW SE NE sec. 15-46n-64w. W.O. csg.
Updike Bros. No. 6, CSL NE SW sec. 25-46n-64w. Cmtd. 8¼-in. through Greenhorn; W.O.C.
John Brophy No. 1 George, SW SE NW sec. 26-48n-64w. T.D. 2,080 ft.; W.O. csg.

MONTANA

Montana gasoline sales for May amounted to 13,501,482 gallons, of which 3,296,287 gallons were imported and 10,295,195 gallons were refined in the state. This compares with 13,034,333 gallons in April, of which 3,323,307 gallons were imported and 9,711,023 gallons were refined in Montana. Exports by Montana refiners were 3,210,552 gallons in May and 2,761,301 gallons in April.

Carbon County

Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. Drlg. 1,745 ft.
R. C. Tarrant No. 1, 500 ft. W of C sec. 3-6s-18e. T.D. 2,205 ft.; drlg. through fault; probably abd. and drill another.
R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. S.D. 1,780 ft.; chg. to rotary.
Sha-Wa Pet. Co. No. 1 Govt., SW NW NE sec. 35-9s-23e. T.D. 3,124 ft.; perf. csg. 2,985 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. Drlg. 2,391 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE sec. 5-14n-55w. Drlg. 1,095 ft.

Fallon County

Montana-Dakota Utilities Co. No. 35 Unit 7, C SW sec. 9-6n-60e. Drlg. 506 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 1,036 ft.

Glacier County

There was one completion in the Cut Bank field in the Glacier Production Co. No. 4 Coburn, NW SE SW section 5-33n-5w, which swabbed 145 bbls. in 15 hours from the Cut Bank sand at 2,768-2,803 feet, the latter also being the total depth. The 7-inch was cemented at 2,775 feet. Elevation is 3,763 feet.

Three new operations were reported.

Glacier Prod. Co. No. 1 Thomas Unit, 1,980 ft. from S line, 2,640 ft. from W line, sec. 14-35n-5w. Drlg. 1,585 ft.; Colo. 450 ft.; 10¾-in. 472 ft.
Glacier Prod. Co. No. 3 Bonnet, CSL NW SW sec. 4-32n-5w. Drlg. 2,070 ft.
Texas Co. No. 9 Unit 6, C NW NW sec. 9-32n-5w. Drlg. 2,680 ft.
A. B. Cobb No. 1 Reagan-Jackson, SW SE NW sec. 5-32n-5w. Cmtd. 7-in. 2,743 ft.; drlg. plug.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE sec. 17-33-5w. S.D. 2,258 ft.
Texas Co. No. 3 Hardwick, C NE NE sec. 17-32n-5w. R.U.
Santa Rita O. & G. Co. No. 3 Ritchie, SE NW SW sec. 5-33n-5w. Drlg. 385 ft.
A. E. Wilkinson No. 3 Allotted-111, C NW SW sec. 31-33n-5w. Top Colo. 555 ft.; 10¾-in. at 586 ft.; W.O.C.

Petroleum County

O. B. Canfield No. 2 Govt., SE NE NE sec. 21-17n-24e. Drlg. 779 ft.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW sec. 3-27n-4w. Res.; R.U.

Stillwater County

Indian Terr. Ill. Oil Co. No. 2 Hepp, NW NW NW sec. 25-1n-21e. Drlg. 4,646 ft.

Teton County

Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW sec. 5-27n-5w. T.D. 270 ft.; strghtn. crkd. hole.

Toole County

There were one completion and one new operation in Kevin-Sunburst. The Big West Oil Co. No. 8 Gunderson, CNL NE NW sec. 19-35n-2w, is pumping 45 bbls. per day with only a trace of water, from the contact at 1,590-95 feet. It pumped 3 bbls. per day naturally before acidizing with 1,000 gallons and again with 500 gallons.

G. H. Lund No. 1 Dahleen, C SE NW section 35-35n-4w, between Kevin-Sunburst and Cut Bank fields, is pumping 5 bbls. per day naturally. It is expected to do much better when acidized.

General Oils, Ltd., No. 1 State, SW SE SE sec. 36-35n-4w. R.U.
Chab Oil Co. No. 2 Govt., NW NE NW sec. 12-35n-3w. Drlg. 1,000 ft.
A. E. Crumley & Son No. 13 Fryberger, CNL NW SE sec. 24-35n-3w. Drlg. 1,000 ft.
Big West Oil Co. No. 2 Engle, SE SW SW sec. 1-35n-3w. T.D. 1,720 ft.; P.B. to 1,812 ft.; acd. 500 gal.
Henry Vander Pas No. 2 Ward, SE SW NW sec. 28-35n-3w. T.D. 1,711 ft.; contact 1,706 ft.; acd. 500 gal.
G. H. Lund No. 1 Dahlen, C SE NW sec. 35-35n-4w. T.D. 2,057 ft.; tstg.
Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. T.D. 2,430 ft. in Madison; drlg. up tbg.; wtr. sd. 2,400-21 ft.
Casper T. Oien No. 8 Engermoen, SW NE SW sec. 11-35n-2w. T.D. 1,630 ft.; contact 1,610 ft.; S.O.; will acd.
V. F. Dahl No. 1 Kimball, SW SE SE sec. 1-35n-3w. T.D. 1,486 ft.; cmtd. 7-in.; W.O.C.
O. A. Nepstad No. 2 Haugen, NW NW NE sec. 11-35n-3w. Drlg. in new hole at 350 ft.
Pfabe & Engleking No. 2 Hurley, NE NE NW sec. 8-34n-2w. Drlg. 160 ft.
H. C. Morton No. 8 Morton, C SW NW sec. 24-34-2w. S.D. 650 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. S.D. 2,109 ft.
West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. T.D. 2,160 ft.; pmpg. 300 B.W.P.D.; no oil.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW sec. 18-3n-23e. S.D. 4,565 ft.; to resume.
Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. Drlg. 1,814 ft.

UTAH

Daggett County

The Clay Basin gas field was extended a mile to the east in the Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW section 23-3n-24e, which was completed at 6,035 feet in the Dakota, topped at 5,-

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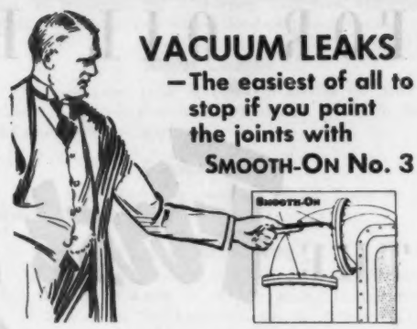

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918 feet, for 16,000,000 feet of gas per day with a pressure of 2,160 pounds. Location is a mile east and a little south of No. 2 Government, a producer in the Frontier, and the same distance northeast of No. 1 Lauzur. The developed area now extends 2½ miles east and west and 1½ miles northwest-southeast.

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. T.D. 1,600 ft.; rng. 10-in. to 1,397 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE sec. 4-22s-19e. Drlg. 3,948 ft.

Summit County

Mountain Fuel Supply Co. No. 1 Wilde, NE SE SE sec. 9-2n-5e. Drlg. 975 ft.; S.O. heavy flow wtr. at 682-95 ft.
Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. T.D. 2,876 ft.; fsg.; H.F.W.

NEBRASKA

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW sec. 21-14n-37w. Drlg. sh. 1,200 ft .

Sioux County

Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE sec. 15-28n-55w. Cg. 6,710 ft.

NORTH DAKOTA

Williams County

California Co No. 1 Kamp, C NW NE sec. 3-154n-96w. Drlg. 8,719 ft.

West Texas Fields

(Continued from Page 74)

426 bbls. Midstates Oil Co. No. 19 Whittenburg, 2,883-2,951 feet, 782 bbls. Phillips Petroleum Co. No. 5 Gary, 3,203-57 feet, 409 bbls. Seaboard Oil Co. No. 6 Whittenburg, 2,670-2,700 feet, 391 bbls. Smith Bros. No. 3 Umphres, 3,140-77 feet, 740 bbls. Stanolind Oil & Gas Co. No. 12-A, 3,048-3,160 feet, 587 bbls.; No. 7 Watkins, 2,780-2,874 feet, 767 bbls. Stayton Oil Co. No. 8 Moore, 3,140-88 feet, 306 bbls. Travelers Oil Co. No. 5 Haile, 2,990-3,035 feet, 840 bbls.

Parmer County

Jennings Drilling Co. No. 1 S. G. Wilson, dry and abandoned 1,031 feet.

Kansas Fields

(Continued from Page 75)

ville sand at 1,365-1,437 feet, and from Chat at 1,550-65 feet.

Hill and McClure No. 1 Kelly, NW SE SW section 17-26-15, a wildcat, was abandoned at 1,507 feet after getting a hole full of water from Mississippi lime at 1,500 feet.

Cowley County

E. B. Shawver No. 6 Shawver, SE NE SE section 3-30-4, Cowley County, got the Bartlesville sand at 2,794-2,804 feet, and shot it with 20 quarts. The hole was cleaned out and deepened to sand at 2,810-18 feet, the oil increasing. At a total depth of 2,833 feet the well tested a potential of 152 bbls. of oil and no water.

Hutchinson Oil & Gas Co. No. 1-A Ketchen, SW SE SE section 11-35-5e, Cowley County, was dry and abandoned at 3,242 feet. Bartlesville sand was missed and Mississippi lime topped at 3,168 feet.

I. Nadel and Texas Co. No. 4 David A, 981 feet south and 990 feet west of C section 35-30-4e, was shot with 20 quarts in Bartlesville sand at 2,938-56 feet, total depth 2,961 feet, and pumped 28 bbls. in six hours and pumped off. It was completed.

Sumner County

Stelbar No. 18 Erker, 800 feet from north and 850 feet from west lines of SW quarter section 33-31-1w, Sumner County, made a potential of 486 bbls. of oil and no water after a 5,000-gallon acid treatment in Chat topped at 3,625 feet, total depth 3,661 feet.

Rooks County

Carter Oil Co. No. 1 J. F. Whitford, 455 feet from north and 440 feet from east lines of SE quarter section 12-7s-17w, Rooks County, a wildcat, was dry and abandoned at 3,355 feet. Siliceous lime was found at 3,321-55 feet with no oil showing. The hole was plugged back and the casing perforated at various depths in the 2,900- and 2,800-foot horizons and acidized, with no better results.

Another Rooks County failure was Graham and others No. 1 Fike, a wildcat, SW cor. section 9-9-17w, which was abandoned at 3,507 feet. Siliceous lime at 3,498-3,507 feet showed only water.

Gulf Coast Fields

(Continued from Page 78)

Humble Oil & Refining Co. No. 1-B Mathews, perforated casing 5,575-79 feet, 597 bbls., quarter-inch choke.

Liberty County

Cleveland field: Gulf Oil Corp. No. 21-C Kirby Lumber Co. perforated casing 9,090-9,100 feet, 42 bbls., distillate, quarter-inch choke. Hardin field: Gulf Oil Corp. No. 3-A Barfield, 7,661 feet, abandoned.

Matagorda County

Markham field: Cron & Gracey No. 1 J. C. Carlson, 6,436 feet, abandoned. Palacios field: Bennett Production Co. No. 1 Foley Land Co., 9,316 feet, abandoned.

Wharton County

Spanish Camp field: Humble Oil & Refining Co. No. 1 J. D. Hudgins, 7,500 feet, abandoned.

Official Vehicles Place Heavy Load on Motorist Taxpayers

Exemption from taxes enjoyed by publicly owned motor vehicles last year cost motorist taxpayers close to $18,000,000, according to estimates of the American Petroleum Industries Committee. Incomplete data show that in 1937 more than 336,000 such vehicles were registered in the United States. Of this number the federal government accounted for nearly 105,000, state and local government units accounting for the rest.

Publicly owned motor vehicles pay neither gasoline taxes nor registration fees. The committee estimates that if the 336,000 cars and trucks owned by government units had been required to pay taxes at the same rate as other motorists, their share of the total automotive tax bill would have come to $17,800,000. This figure represents the approximate value of highway facilities used by these vehicles last year, but since they are exempt from highway taxes, motorists actually paid the bill for them.

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Southwest Texas District

By
F. L. SINGLETON

Promised East Extension to New Jim Wells County Pool

CORPUS CHRISTI, Tex., July 4. — Prospects of a mile east extension to the South Alice field, Jim Wells County, and announcement of two highly regarded wildcat locations along the same trend, featured developments in the Southwest Texas district.

Pan American Production Co. and others were preparing to make a production test at No. 1 Cook, an outpost 5,000 feet east of production of the South Alice field, Jim Wells County. The hole is bottomed in shale at 5,511 feet, and 7-inch casing was cemented at 5,350 feet, following an electrical survey which showed promise of production at 5,310-15 feet. Drill-stem tests of the upper sand at 5,125-59 feet showed as much as 300 pounds of pressure and a slight amount of distillate. Shale was cored at 5,354-64 feet, and salt water sand at 5,364-73 feet. Should the well fail to produce in the 5,300-foot horizon, it will be plugged back and completed as a distillate producer. Pan American Production Co. is the first major company to enter into the present drilling campaign. No. 1 Cook was originally started by Early Calloway, who sold a half interest and operating control in 431 acres to Pan American which has agreed to drill additional wells provided the test makes a producer.

Approximately 2 miles north of production, Mills Bennett Production Co. No. 1 W. R. Perkins was coring below 5,350 feet and is given little chance of producing. Hard Cap was cored at 5,319-20 feet, and sand and shale with gas odor at 5,323-41 feet. An electric survey was made and apparently showed nothing of promise as the hole is drilling below the producing horizon.

South Alice Completions

In the field proper, two new producers were completed. H. H. Howell No. 7 Lindsay and Reed, 933 feet west of No. 4 Lindsay and Reed, flowed 161 bbls. per day through a one-eighth-inch choke with tubing pressure 800 pounds and casing pressure 1,000 pounds. Casing was cemented on bottom at 5,305 feet, and the completion was made through perforations at 5,280-5,300 feet. Same operators No. 12 Lindsay and Reed, 1,000 feet south of No. 5, flowed 150 bbls. daily through a one-eighth-inch choke through perforated casing at 5,251-70 feet.

Three miles southeast of Premont, Shell Petroleum Corp. is moving in material for No. 1 C. H. F. Von Blucher in the Lucinda Best Survey, Abstract No. 44. Approximate 5½ miles northeast of Ben Bolt in the Marcellino Lopez grant, Abstract No. 28, Humble Oil & Refining Co. is moving in material for No. 1 Adams, scheduled to be drilled to 7,000 feet. The well is about 2½ miles northeast of the company's No. 1 E. C. Tarrant, abandoned the past week at 6,570 feet due to mechanical trouble. Several encouraging showings were logged in this test and it was considered having a good chance to produce before mechanical trouble developed. Both tests are on geophysical prospects.

The progress of two wildcats in Live Oak County was being closely followed as showings of oil and gas have been reported. Four miles northeast of George West in the John Ely Survey, McSpaddin & Tombs No. 1 Jones cored sand and shale with a gas odor at 2,117-23 feet, and gas sand at 3,123-26 feet. Sand showing oil was cored at 3,126-27 feet, and shale from 3,136-39 feet. A 15-minute drill-stem test at 3,117-39 feet tested 125 feet of oil-cut mud and 45 feet of salt water. It is coring below 3,182 feet. Two and one-half miles southwest of Lagarto in the J. Poitevent Survey No. 1, Glenn H. McCarthy (J. B. Chew) No. 1 Cartwright is preparing to core from a total depth of 6,187 feet, after a 35-minute drill-stem test at 6,128-87 feet, tested 1,350 feet of slightly oily cut mud with no pressure. The drill-stem test was attempted at 6,105 feet, but the seat of the testing tool slipped to 6,128 feet. Stewart Oil Co. No. 1 Nations, 2 miles north of the Ezzell field, has been abandoned at 1,769 feet after swabbing salt water through perforated casing at 1,498-1,509 feet.

In the Saxet field, Nueces County, Pan American Production Co. No. 5-B Sagarino, which is seeking the newly opened 7,300-foot zone, is shut down at 7,400 feet, and has apparently failed to pick up the sand. An electrical survey was made of the hole, and side wall cores were being made at 7,276-85 feet which carried a distillate odor.

H. J. Porter No. 2 Fitzsimmons, the second oil well for the newly opened Fitzsimmons field, flowed 137 bbls. per day through a 5/32-inch choke with tubing pressure 220 pounds and casing pressure 500 pounds. The well is producing from sand at 4,290-4,300 feet, total depth. Drilling was started on the same operators No. 2-A Fitzsimmons, a "twin" well which will be completed in the 3,600-foot sand. In the Cuellar field, Arkansas Fuel Oil Co. has started drilling on the No. 2 Cuellar Brothers in section 96, an offset to the discovery.

In the Casa Blanca field, Duval County, 660 feet south of the discovery, Magnolia Petroleum Co. is completing No. 2 Duval County Ranch Co. after a drill-stem test at 1,203-07 feet, total depth, showed 210 feet of pipe line oil. Seven-inch casing was cemented at 1,194 feet.

W. F. Houser No. 1 Garcia-Villareal, Survey 720, Webb County, cored sand with an odor of oil at 2,502-04 feet and on a drill-stem test at 2,500-24 feet the well tested 250 feet of dry gas pressure. This is the second gas sand to be cored as a previous test at 1,969-2,014 feet tested 420 pounds of pressure.

In Jim Hogg County, Humble Oil & Refining Co. has abandoned No. 1 Kelsey Bass at 7,517 feet. Several sands showing high gas pressure were logged, and this prospect is expected to get additional development in the near future. It is in the San Rafael grant.

In the LaReforma area, Starr County, J. L. Collins No. 1-A Guerra, Share 20, Santa Cruiz grant, is coring sand showing gas and oil at 6,639 feet. Seven-inch casing was recently cemented at 6,590 feet, and the well is considered having an excellent chance to produce as nice showings have been logged. Several tests have been drilled in this area, all having encouraging showings.

Lee Davis No. 1 Garza, in the extension area of the Barbacoas field, Starr County, pumped 30 bbls. of fluid in 15 hours, of which 24 bbls. was oil and the balance brackish water.

In the Lower Gulf Coast region, I. J. Allen No. 1 Mrs. Birdie Driscoll Rooke, a wildcat 4 miles south of the town of Woodsboro, Refugio County, was looked upon as a possible pool opener after a four-minute drill-stem test at 5,382-93 feet, showed 400 pounds of working pressure through a quarter-inch choke and recovered 15 feet of mud and distillate. The sand is believed to be in the upper section of the Frio formation and the hole is being cored deeper. No. 1 Rooke is in the east corner of the Rooke ranch in the Aldrite 6¼ League, approximately 1½ miles northwest of the same operator's No. 1 Rooke, recently abandoned at 4,568 feet. Several wildcats have been drilled in this area, all reported to have logged favorable showings.

Interest in the Balcones Fault Line district is centered on F. L. Thomson and others No. 1 Davis, a wildcat, 6 miles northeast of Pearsall in the G.B.&C.N.G. Survey, Frio County. While the progress of the well has been retarded by a fishing job at a total depth of 5,682 feet, it was reported to have showed some oil and gas in the Edwards lime at 5,632 feet. The well is on an interesting prospect and has logged oil showings in the Taylor and Austin chalk formation.

COMPLETED WELLS

Completed wells in proven fields of Southwest Texas with total depth and initial 24-hour gauge of producing wells.

Aransas-San Patricio Counties

McCampbell field: Baltic Drilling Co. No. 1 McNulty, 7,126 feet, 125 bbls., three-sixteenths-inch choke. Tusca Oil Co. No. 3 Murray, 7,191 feet, 78 bbls., jetting with gas. B. Wilkinson No. 1 Murray, 7,220 feet, 133 bbls. fluid, 35 per cent salt water, one-eighth-inch choke.

Bexar County

Mitchell Lake field: Philtop Oil & Gas Co. No. 1 Cassin, 1,200 feet, abandoned. Philtop Oil & Gas Co. No. 2 Cassin, 585 feet, abandoned.

Brooks County

Alta Mesa field: Standard Oil Co. of Texas No. 1 Garcia, 2,761 feet, abandoned.

Caldwell County

Branyon field: Lincoln Petroleum Co. No. 10 Calliham-Dillard, 2,329 feet, 41 bbls., pumping. Luling field: C. H. Mee and McNeil Petroleum Co. No. 6 Cosey, 2,146 feet, 50 bbls. oil, 35 per cent sulfur water. Salt Flat field: Millican & Norman No. 1 Merriweather, 2,732½ feet, 30 bbls., pumping.

Duval County

Benavides field: Navarro Oil Co. No. 5-A Owens, 3,879 feet, 202 bbls., three-sixteenths-inch choke. Hoffman field: Cox & Hamon No. 4 Cuellar Hogan, 2,814 feet, 60 bbls., jetting with gas. Cox & Hamon No. 1 Ramerez, 3,205 feet, abandoned. Cox & Hamon and others No. 2 Ruiz, 2,723 feet, 40 bbls., jetting. Duval Oil Corp. No. 2 Hoffman, 2,828 feet, 40 bbls., pumping. Magnolia Petroleum Co. No. 5 Weil, sand 2,664-81 feet, 4 bbls., per hour jetting. Lundell field: Government Wells Oil Co. No. 28 Lundell, sand 1,503-08 feet, 4 bbls. per hour, three-eighths inch choke. Piedra De Lumbre field: Magnolia Petroleum Co. No. 20 Duval County Ranch Co., 2,062 feet, 80 bbls., flowing by heads. Seven Sisters field: Humble Oil & Refining Co. No. 16-B Serna, 2,206 feet, 64 bbls., pumping.

Guadalupe County

Darst Creek field: Morris Oil Co. No. 2 Anderson, 2,651 feet, 60 bbls. oil, 240 bbls., sulfur water, pumping. Nash Creek field: H. M. Martin No. 1 Gonzales, 2,808 feet, abandoned. H. R. Wyatt field: No. 1 Anderson, 2,750 feet, abandoned.

Jim Wells County

South Alice field: Conroe Drilling Co. No. 2 Lindsay & Reed, 5,606 feet, abandoned. H. H. Howell No. 4 Lindsay & Reed, perforated casing 5,300-10 feet, 150 bbls., one-eighth-inch choke.

Live Oak County

Oakville field: Simmons Oil Co. No. 3-B McGriff, 2,136 feet, 31 bbls., three-sixteenths-inch choke.

Medina County

Ina field: Medina Production Co. No. 2-A Schmidt, 1,202 feet, abandoned.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 2 Bonham & Hass, 6,706 feet, abandoned. Luby field: Seaboard Oil Corp. No. 28 Luby, perforated casing 5,061-68 feet, 140 bbls. one-eighth-inch choke. Stanolind Oil & Gas Co. No. 8 McCann, perforated casing 5,060-63 feet, 108 bbls., one-eighth-inch choke. Stanolind Oil & Gas Co.

(Continued on Page 88)

Oklahoma Operations

By
DAL DALRYMPLE

Pool Opened Southeast of Braman Field; Kay County

A pool discovery in Kay County, southeast of the Braman field, was the principal event of the week in Oklahoma. Helmerich & Payne No. 1 State School Land, SW SE SW section 16-28-1w, found first Wilcox sand at 3,530 feet, second sand at 3,603-45 feet, total depth. On a drill stem test, with packer at 3,610 feet, the well flowed oil and gas for 50 minutes and was estimated at 500 bbls. per day or more. Casing was run at the week-end and the well will be given a production test this week.

The Ohio Oil Co. owns a half interest in 480 acres with Helmerich & Payne, including the school land piece and surrounding acres, and the Tide Water Associated Oil Co. owns close-in acreage. Helmerich & Payne recently drilled a failure in No. 1 Scott, SE SE NE section 20-28-1w, abandoning it in Arbuckle lime at 3,716 feet, and Ernest Shaffer drilled a dry hole in the same section stopping at 3,812 feet, which causes speculation as to the size and trend of the new pool.

W. A. Delaney and others No. 1 Bugher, SE SE SW section 12-7n-2w, in Cleveland County, which came in the latter half of May opening a Wilcox sand production and causing some enthusiasts to predict that "another Oklahoma City" had been discovered, has been beset by trouble almost from the time the oil first appeared. It had found Wilcox sand at 7,664-82 feet and the well started flowing from 50 to 100 bbls. an hour, with a little water. The water rapidly increased until one recent gauge showed 373 bbls. of oil and 595 bbls. of water. Finally the well quit flowing altogether and after much time and labor was spent trying to bring it back on production and to control the water, the hole was plugged back 70 feet, which shut off both oil and water. When the cement had set it was drilled out to 7,672 feet at which depth two joints of drill pipe and the bit were lost in the hole, necessitating a fishing job. This was on Friday, July 1. Neither oil nor water was reported in the hole at the new total depth which was 8 feet in the Wilcox.

One-half mile south of the Wilzetta pool in the NW NW NE section 2-12-5, Lincoln County, Indian States Oil Co. No. 1 Bailey found Prue sand at 3,222 feet and drilled to 3,258 feet. The last 10 feet of core taken was solid sand with a good showing of oil. Seven-inch casing was set at 3,210 feet. The Wilzetta pool produces from the Hunton lime.

Greater Seminole Area

C. E. Davis No. 1 Slaughter, NE NW SW section 34-6-5, Seminole County, found Senora sand at 2,270-95 feet, but drilled to 2,373 feet. It is a 20-bbl. well.

Winkler & McQueen No. 7 Bruner C, NW SE NE section 4-6-6, north end of the Konawa pool, was shot with 100 quarts in Boggy sand at 2,865-2,917 feet and flowed 875 bbls. the first 24 hours. The oil grades 37 degrees A.P.I.

J. F. Smith and others No. 1-A Bettis, SE SE SE section 17-7n-4e, St. Louis district, Pottawatomie County, had Simpton sand at 4,148-51½ feet and gave it a 1,500-gallon acid treatment. It pumped 75 bbls. of oil and 400 bbls. of water the first 23 hours.

J. W. Clark and others No. 1 McGee, SW NW NW section 26-7-4, St. Louis district, had Calvin sand at 3,200-24 feet and 3,355-83 feet, and the well produced 12,000,000 feet of gas initially. It had been drilled to 4,280 feet. Seven-inch casing was set at 3,617 feet and the pipe perforated at various depths up the hole to the Calvin pay.

J. F. Smith and others No. 2 Wood, SW NW SW section 31-7-5, St. Louis district, was dry and abandoned at 2,985 feet.

J. E. Trigg No. 2 Canfield, NE NW SW section 33-7-5, had Simpson sand at 4,085-4,118½ feet, total depth. It was acidized with 5,000 gallons and pumped 315 bbls. of oil and 885 bbls. of water in 24 hours and several days later pumped 290 bbls. of oil and 900 bbls. of water. It was completed.

R. McQueen and others No. 1 Harris, SW SW SW section 30-7n-6, a wildcat, west of the Dora pool, was dry and abandoned at 3,185 feet.

Pontotoc County

In the Fitts area, Pontotoc County, E. H. Moore, Inc., and others No. 1 Woto-Jacobus, NE NW NE section 7-2-7, total depth 2,073 feet, was completed as a salt water disposal well. All the Fitts pool pays were found high: Bromide at 1,120 feet, first sand at 1,225 feet, second sand at 1,260 feet, McLish at 1,330 feet, Wilcox at 1,670 feet, Oil Creek at 1,865 feet, and Arbuckle lime at 2,210 feet, original total depth.

Magnolia Petroleum Co. No. 5 Statler, 890 feet from S and 990 feet from E lines of SW quarter section 28-2-7, had Wilcox sand at 4,356-58 feet and was completed as a 150-bbl. producer on the pump.

Oklahoma City Field

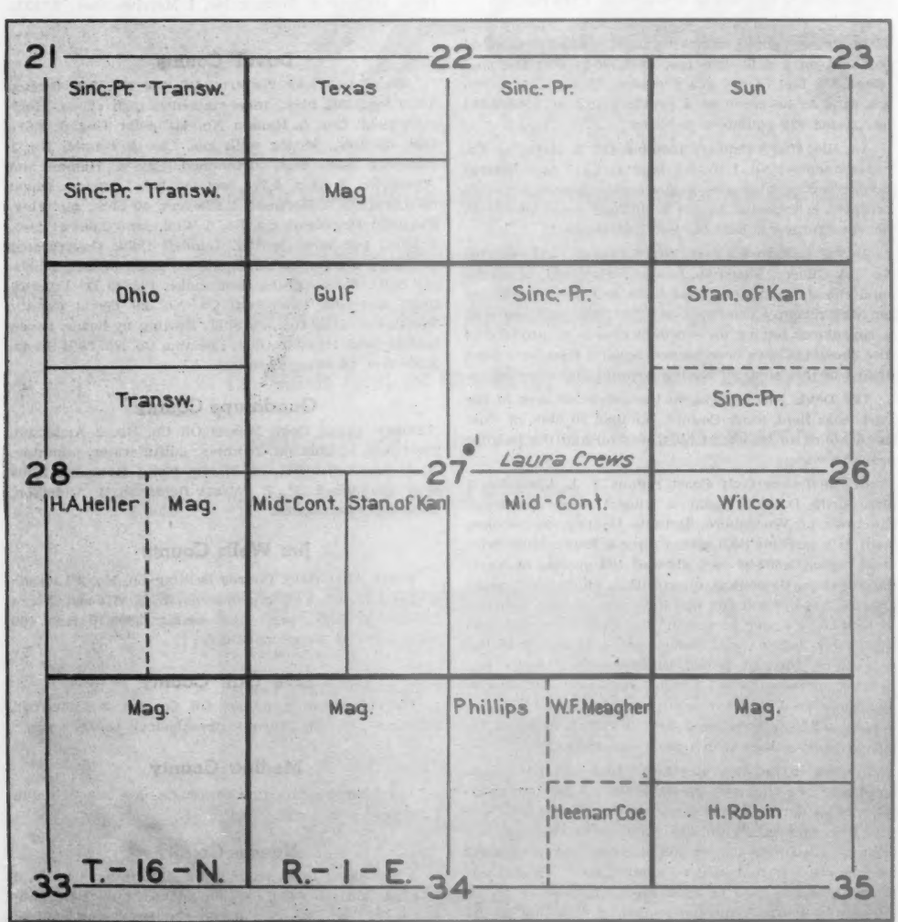
In the Oklahoma City pool, H. R. Hollenbach and others No. 1 Harmon, 1,060 feet N and 693 feet E of SW cor. section 15-12-3w, had pay at 6,405-90 feet and flowed 135 bbls. of oil and 2,000,000 feet of gas the first 24 hours. It had been acidized with 5.000 gallons.

Northern Counties

Oklahoma Oil Corp. No. 1 Koch, SW NW NW section 11-14-10, Creek County, was abandoned as dry at 2,660 feet. It showed an estimated 3,000,000 feet of gas at 2,591 feet.

Mudge Oil Co. No. 4 Robertson, NW NE SW section 10-14-6, Lincoln County, had Prue sand at 3,010-17 feet, total depth 3,103 feet. It was given a 100-quart shot and flowed 25 bbls. and 500,000 feet of gas per day through 2½-inch tubing.

Dixie Drilling Co. No. 1 Charcotetenna, SE cor. SW section 25-18-10, Creek County, was dry and abandoned at 2,197 feet. It had Bartlesville sand at 1,810-2,134 feet and Taneha sand at 2,139-67 feet. L. B. Jackson No. 10 Wells, C N half SW NW section 26-18-8, Olive field, is a 3-bbl. pumper at 2,639-71 feet, which had been shot. Cushing No. 1-A Roberts, NW NW SW section 30-17-9 pumped 10 bbls. of oil and 15 bbls. of water from sand at 2,687-2,712 feet, total depth 2,723 feet. George Marble No. 1 Emmons, 680 feet from S and 60 feet from W lines



Mid-Continent Map Co., Tulsa

Sinclair Prairie Oil Co. No. 1 Laura Crews, which opened a Wilcox pool about 6 miles from nearest production. It is shut in for pipe line connections. The well looks good for about 800 bbls.

NW quarter section 18-19-8, was dry and abandoned at 2,747 feet. Bartlesville sand at 2,675-2,742 feet filled the hole with water. Tide Water Associated Oil Co. No. 21 Richards, 200 feet S and 914 feet W of C section 4-17-7, in the Cushing pool, found oil pay at 2,689-2,710 feet and water at 2,711-16 feet, total depth 2,722 feet. It was plugged back to 2,709 feet and shot with 50 quarts at 2,680-2,706 feet. The well pumped 40 bbls. of oil and 25 bbls. of water in 24 hours.

In Kay County, Dave Morgan Oil Co. No. 2 Pratt, NE NW SW section 31-29-1e, an old well deepened from 3,215 feet, topped Arbuckle lime at 3,334 feet and drilled to 3,345 feet. It pumped 18 bbls. in 24 hours.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending July 2, and for the preceding week, was as follows:

	Barrels	
	July 2	June 25
Allen	5,975	6,150
Billings	3,225	3,775
Burbank	5,750	6,500
South Burbank	9,500	9,550
Balance Osage	14,750	17,300
Blackwell district	3,925	4,050
Bristow-Slick	4,675	6,500
Chandler	1,625	1,750
Crescent	3,900	3,850
Cromwell	2,625	2,750
Cushing-Shamrock	7,425	9,275
Duncan district	3,425	3,525
Edmond	5,900	4,025
Fish	3,150	2,750
Fitts	39,175	39,800
Jesse	2,725	2,175
Graham	3,775	3,875
Gray	925	875
Healdton	7,875	8,225
Hewitt	3,250	3,550
Keokuk	3,525	3,275
Konawa	1,350	1,075
Luclen	7,250	7,075
Moore	4,175	4,250
Oklahoma City	73,450	95,225
Olympic	5,150	4,800
Ramsey	1,450	1,425
Sasakwa	1,325	1,175
Sholem-Alechem	2,325	2,550
Seminole district:		
Bowlegs	8,125	7,825
Carr City	3,475	3,175
Dora	4,725	4,225
Earlsboro	4,550	4,250
South Earlsboro	525	425
East Earlsboro	4,650	4,375
Little River	7,050	6,125
East Little River	875	650
Maud	650	450
Mission	1,450	1,200
Seminole	6,125	6,225
East Seminole	1,375	1,250
Searight	2,775	2,525
Total Seminole	47,350	42,700
St. Louis-Pearson	18,725	17,750
Tatums	2,850	3,225
Tonkawa-Garber-Thomas	3,950	3,275
Wewoka	1,950	2,025
Yale-Jennings	3,175	3,375
Other pools	65,000	75,000
Total Oklahoma	376,575	408,450

Okmulgee and Okfuskee Counties

In Okfuskee County, Grimes & Neal No. 8 Wind, 1,060 feet from S and 660 feet from E lines of NE quarter section 35-11-9, is a 35-bbl. well in sand at 1,463-1,500 feet, after a 60-quart shot. Suppes & White No. 2 Alexander, 660 feet from N and 1,170 feet from W lines of NE quarter section 35-11-9, started at 48 bbls. a day from sand at 1,450-79 feet, shot with 40 quarts. Jim Wise and Iverson Tool Co. No. 1 Fields, SE SW NW section 2-11-11, was dry and abandoned at 2,924 feet. Bill Staples and others No. 1 Brown, NE SE SE section 21-12-11, flowed 150 bbls. the first 24 hours from Booch sand at a total depth of 2,209 feet.

In Okmulgee County Buell, Inc., No. 2 Smith, C NW SE section 17-13-11, was good for 40 bbls. a day after a 10-quart shot in Wilcox sand at 3,250-54 feet. H. C. Detrich No. 1-A Hannah Anderson, SE SW NW section 15-13-13, pumped 30 bbls. the first day from Booch sand at 1,458-72 feet, which had been shot with 60 quarts. Pitts Hassey and others No. 1 Tucker A, 360 feet W and 1,170 feet N of C section 35-14-11, was dry and abandoned at 3,040 feet. Wilcox sand was at 2,983-97 feet. W. W. Wilson No. 1-A Mayfield, NW NE NE section 27-14-14, made a 15-bbl. pumper from sand at 1,035-65 feet, total depth 1,363 feet. It missed Booch sand. Bryan Petroleum Co. No. 2 Thompson, near C NE NE section 8-15-11, flowed 100 bbls. a day after an 80-quart shot in sand at 1,998-2,030 feet, total depth, in sand. E. E. Karam No. 2-A Kirchner found Dutcher sand at 1,864-92 feet, total depth, and after two small shots it pumped 25 bbls. in 24 hours.

In Tulsa County, B. F. Cook No. 3 Barber, SE cor. NE SE section 14-17-12, was dry and abandoned at 1,440 feet with the tools in the hole. Whitten & Leonard No. 1

(Continued on Page 96)

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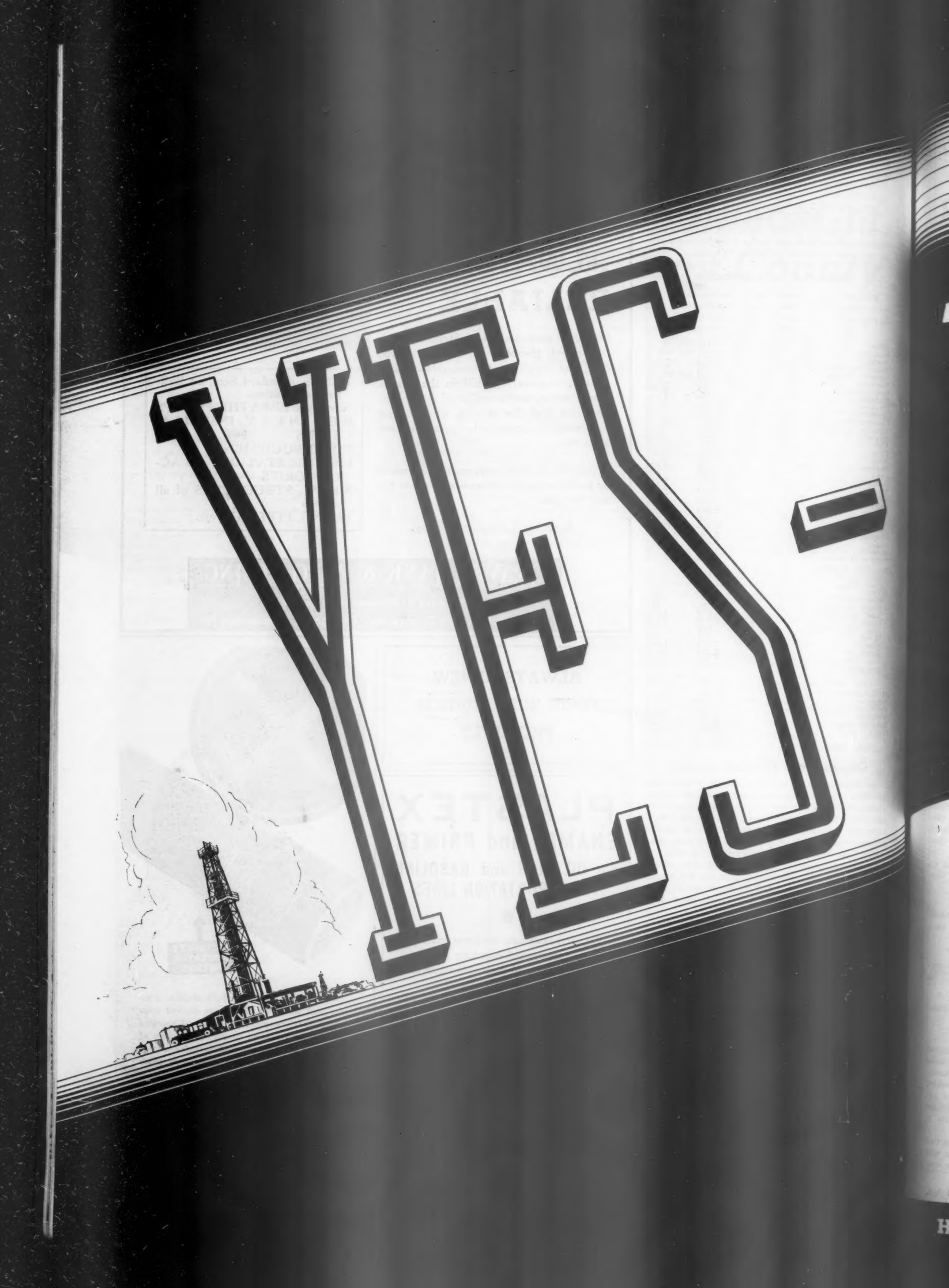
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By
GEORGE WEBER

Schuler Crude Congestion Should be Relieved in July

SHREVEPORT, La., July 4.—New field development in the tri-state area lagged during the week, as drilling continued under routine operation. The augmented allowable granted the Schuler field of Union County, Arkansas, constituted the most important news of the week in that state. Numerous new operations in South Arkansas will draw interest to Columbia, Union and Lafayette counties in a few weeks.

In North Louisiana, a wildcat drilling in Union Parish had a showing of gas. The Stanolind Oil & Gas Co. well which opened the first oil production in the Lower Marine of Cotton County is being completed. The Blue Lake area of Sabine Parish looked disappointing in the past week with abandonment of a test near the discovery well.

Schuler Increase

The Arkansas Board of Conservation called a hearing in El Dorado last Monday to hear testimony on production allowables for the Jones sand of Schuler during July. It was revealed at the hearing that the bottom-hole pressure in key wells in the field had risen during the month of June, the first reversal of the pressure trend since the field was opened,

This rise was a result of drastic curtailment of production, first by the board of conservation in cutting production back, and in addition by purchasers of Schuler crude, who could not handle the allowable, and therefore effect further curtailment.

The Atlas Pipe Line Co. has, however, contracted for a reported total of 150,000 bbls. of Schuler crude to be moved to the Gulf Coast during July, thus brightening the outlet picture. The board of conservation raised the field allowable from 9,600 to 15,000 bbls. daily. This increase, in addition to the indication that all wells will hereafter be allowed to produce ratably, may have an accelerating effect on Schuler drilling.

Two Jones sand wells were brought in during the past week in Schuler. The E. M. Jones No. 1 Rogers, SW SW section 16-18-17, produced 1,020 bbls. in the first 13 hours, or at the rate of 1,880 bbls. daily, through half-inch choke. The casing, set at 7,616 feet, was perforated at 7,570-96 feet. Tubing pressure was 700 pounds and casing pressure, 950 pounds.

The Lion Oil Refining Co. brought in No. 1 Nelson, section 18-18-17, for an initial gauge of 457 bbls. per day through a 16/64-inch choke. Tubing pressure was 875 pounds and casing pressure 1,025 pounds. Total depth of the well is 7,700 feet.

Magnolia Activity

The first widespread activity in development of the Magnolia field of Columbia County, South Arkansas, is getting under way. The field, discovered several months ago by the Kerr-Lynn Oil Co. when the No. 1 Barnett, near the town of Magnolia was completed, has nine locations staked for drilling in the near future.

The Atlantic Refining Co., which purchased the discovery well and holdings of the Kerr-Lynn interests, has staked locations for seven tests around the single producer. Two of these are located on farm-outs from the Arkansas Fuel Oil Co.

In addition to the Atlantic locations, the Shell Petroleum Corp. has staked locations for two tests. These are to get under way shortly, due to lease expirations.

In the Buckner area, the completion of the Standard Oil Co. No. 2 McKean last week was followed by moving rig over to No. 3 location, a north offset to the company's No. 1 Waters producer. Standard has two tests drilling in this field.

Cotton Valley Outpost

Indications were on last report that the completion of the Stanolind Oil & Gas Co. No. 1 Pardee was close at hand. This 1¾-mile southeast outpost to Cotton Valley attracted considerable attention a few days ago by discovering oil in the Lower Marine formation, heretofore productive only of gas and distillate. Tubing was plugged, however, and after closing in following production tests through the casing, operators announced that the well would be killed and the tubing cleaned and rerun. After 104 joints of tubing had been pulled, the plug broke out, and the tubing was run back in the hole. Operators were completing christmas tree at the week-end, and will have it ready for steady production as soon as a pipe line outlet is given the well. Thus far no announcements have been made for line extensions to the well.

An important south outpost well, Midstates Oil Co. No. 1 Welori, in section 3-20-10 had set 7-inch casing at 8,656 feet, total depth at 8,687 feet, and completion as a Bodcaw gas and distillate well was expected early in this week. The mile south outpost encountered the Bodcaw sand at 8,597 feet, according to cuttings.

One small Holloway well was completed in Cotton Valley during the week. Ohio Oil Co. No. 4 Holloway, a workover of an old gasser completed in 1927, was deepened from 4,537 feet to 5,633 feet and brought in for an initial of 34 bbls. of oil in 22 hours through one-eighth inch choke, casing pressure standing at 100 pounds.

Production by Pool

Estimated daily gross production all companies week ending July 1:

NORTH LOUISIANA

	Barrels
Bellevue	640
Caddo light	4,060
Caddo heavy	2,465
Converse	665
Cotton Valley heavy	75
Cotton Valley light	*10,720
De Soto and Red River	1,400
Elm Grove	350
Haynesville	2,890
Holly	70
Homer	2,630
Lisbon	10,590
Pleasant Hill	105
Rodessa	37,125
Sarepta-Carterville	†550
Sligo	510
Sugar Creek	295
Urania	2,855
Zwolle	1,415
Total	79,410

SOUTH ARKANSAS

Buckner	1,195
Champagnolle	1,165
El Dorado	1,830
Lisbon	270
Miller County	390
Nevada	650
Rodessa	7,320
Schuler	16,640
Smackover light	2,090
Smackover heavy	16,390
Stephens	570
Troy	1,230
Urbana	1,200
Village	160
Total	51,100

Texas side of Rodessa field 30,515 bbls. daily.

*4,165 bbls. is distillate.

The Blue Lake area southwest of the Zwolle field, in Sabine Parish, received a setback when F. W. Martin Drilling Co. No. 1 Sabine Lumber Co., sesction 26-7-14, was abandoned. The test was drilled as a "mystery" well. It was carried to a total depth of 4,508 feet.

After plugging back to 3,500 feet, where a show of gas had been encountered, operators made a drill stem test at 3,545-75 feet and got only a show of gas. The abandoned test is located in a northeast offset position to the Sutton-Zwolle Oil Co. No. 1 Sabine Lumber Co. which blew out several weeks ago, opening the new deep production at 4,200 feet.

A slight show of gas attracted interest to the Farmerville area of Union Parish, near the Arkansas line. The Standard Oil Co. of Louisiana No. 1 Frost Lumber Co. cored hard sand at 9,721-41 feet showing a gas odor at 9,731-37 feet. Hard grey sand with no showing was cored at 9,741-61 feet, and black silty Dolomite at 9,779-91 feet.

Numerous scattered wildcats are approaching interesting depths. North of Shreveport, on the edge of Cross Lake, the R. E. Allison No. 1 Ellerbee was last reported to be drilling lime below 5,650 feet with no showings as yet.

Texas Border

In Shelby County, Texas, Redditt No. 1-A Pickering in the P. J. Loggins Survey tried to blowout while coring at 4,019 feet. The well is believed to be in the top of the Paluxy, where a previous test, the operator's No. 1, encountered high pressures.

Another East Border of Texas wildcat, Texas Co. No. 1 Adams in the Thomas Cox Survey is drilling around 8,500 feet. A third interesting Texas test is Arkansas-Louisiana Gas Co. No. 1 Johnson, located 1 mile south of the company's No. 1 Pitts, which several weeks ago extended the Jefferson field 1½ miles to the southwest by completion as a gasser in the Hill sand. The Johnson No 1 is drilling below 2,300 feet.

Southwest Texas Fields

(Continued from Page 83)

No. 9 McCann, perforated casing 5,054-57½ feet, 123 bbls., one-eighth-inch choke. Stanolind Oil & Gas Co. No. 7 Spessard, perforated casing 4,348-51 feet, 117 bbls., one-eighth inch choke. Saxet field: Conroe Drilling Co. No. 9 Bliss, perforated casing 6,725-38 feet, 12 bbls. per hour, one-quarter-inch choke. Lonnie Glasscock No. 1-D Glover, 7,396 feet, 99 bbls., distillate, one-eighth-inch choke.

Refugio County

Refugio field: Houston Oil Co. No. 46 Rooke, sand 6,194-6,203 feet, 212 bbls., one-eighth-inch choke. W. F. Morgan No. 1 Mitchell, 7,121 feet, 30 bbls. distillate, 5/32-inch choke. Tomoconnor field: Copano Oil Co. No. 2 O'Connor, 5,924 feet, 584 bbls., quarter-inch choke. Copano Oil Co. No. 10 O'Connor, 5,920 feet, 595 bbls., quarter-inch choke. Quintana Petroleum Co. No. 3 Heard, 5,938 feet, 1,344 bbls., three-eighths-inch choke. Quintana Petroleum Co. No. 29 O'Connor, 5,925 feet, 1,431 bbls., three-eighths-inch choke. Union Producing Co. 73 Lambert, perforated casing 5,846-66 feet, 94 bbls., 3/32-inch choke.

San Patricio County

Midway field: Phillips Petroleum Co. No. 4 Schmidt, perforated casing 5,342-44 feet, 138 bbls., 7/64-inch choke.

Zapata County

Comitas field: J. P. Nash, Trustee, No. 29 Haynes, sand 1,106-18 feet, 35 bbls., pumping.

Victoria County

Heyser field: Sun Oil Co. No. 9 Coffey, perforated casing 5,744-46 feet, 91 bbls., 7/64-inch choke.

OTTAWA, Ontario.—Imports of petroleum, asphalt and their products into Canada in April were valued at $2,540,128 compared with $2,832,783 in March. Crude petroleum imports in April totaled 51,703,662 gallons and included: United States, 37,238,662 gallons; Colombia, 6,924,000 gallons; Venezuela, 3,793,000 gallons; Peru, 3,748,000 gallons. Crude imports in March amounted to 61,101,839 gallons.

Exports of petroleum and its products from Canada in April were valued at $26,334 compared with $109,839 in March.

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California Field Report

By
L. P. STOCKMAN

Guijarral Hills Discovery Well Starts at 4,500 Bbls.

LOS ANGELES, Calif., July 4.—Petroleum Securities Co. removed any doubt about the existence of a new high gravity oil field in the Guijarral Hills district of Fresno County on the evening of June 30 when No. 2 Gatchell was given a production test and responded flowing 4,500 bbls. of very clean 31.9-gravity oil and about 12,000,000 feet of natural gas per day. The well was still building up at last reports and consequently its potential will not be determined for another several days. Exact gauges have not been made on gas production as the amount of gas greatly exceeded expectations and found the crew totally unprepared for such a high volume. No. 2 Gatchell is bottomed in the Avenal zone of Eocene age at 6,908 feet and has cored 96 feet of exceptionally heavily saturated oil sand. A formation test made late last week at 6,690-6,730 feet resulted in a recovery of 190 feet of gas-cut mud and a few spots of oil but a subsequent formation test at 6,690-6,849 feet and open for a period of one hour showed the well good for 3,000 bbls. of clean 31.2-gravity oil and 5,000,000 feet of natural gas per day. No. 2 Gatchell definitely proves up the existence of a primary field at this point and the large production secured will greatly stimulate additional development not only by Petroleum Securities but by other operators also.

Petroleum Securities Co. is building derrick for No. 88 Grimes to be drilled in the SE cor. section 12-20-15, and spud will probably be made within 15 days. The discovery well, No. 2 Gatchell, is in section 18-20-16, and No. 88 Grimes due northwest of it. Superior Oil Co. has staked location for No. 1 Hight in section 8-20-16, northeast of the discovery well and will no doubt also start additional drilling in section 12-20-15, where the company recently acquired protective acreage. Superior Oil Co. has the reputation of not wasting any time getting into action whenever it has any possibly productive acreage in a new area. The Texas Co. has derrick up for No. 19 Mohawk, NW cor. section 12-20-15, and present plans call for immediate work. Tide Water Associated Oil Co. staked location for No. 33 Guardian northwest of No. 19 Mohawk of the Texas Co. which in turn is northwest of the discovery well. Universal Consolidated Oil Co. has a new rig standing for No. 1 Leavitt-Hintze and will have rotary drilling equipment on ground shortly. No. 1 Leavitt-Hintze, No. 33 Guardian and No. 19 Mohawk are all located in section 12-20-15, and will probably prove productive upon completion as they are in the trend expected to be followed by the field. Completion of No. 2 Gatchell has greatly stimulated interest in this section of the San Joaquin Basin and is partly responsible for the resumption of drilling operations by Jacalitos Petroleum Co. which has a wildcat in section 14-21-15. This well is down 5,685 feet and the company has just run in and cemented a string of casing at 5,445 feet preparatory to going ahead.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	June 24		June 17			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Crude oil	69,611	9,516	.....	.....	272,750	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	132,562	18,937	1,469,363	1,713,865
Kerosene	.....	.....	.....	.....	199,453	250,642
Foreign exports:						
Crude oil	248,171	35,453	629,591	89,942	12,062,118	6,677,058
Fuel oil	96,553	13,793	.....	.....	4,118,665	7,135,463
Diesel and gas oil	80,334	11,476	38,885	5,555	2,876,236	3,508,461
Gasoline	274,723	39,246	250,536	35,791	3,471,810	3,697,189
Kerosene	.....	.....	6,145	878	574,647	1,100,606
Asphalt	.....	.....	15,564	2,223	15,564	.....
Other unfinished oil	.....	.....	.....	.....	.....	576,948
Coastwise-domestic:						
Crude oil	168,126	24,018	176,950	25,279	5,292,652	3,375,483
Fuel oil	134,140	19,163	154,740	22,106	5,130,831	7,223,026
Diesel and gas oil	57,324	8,189	44,116	6,302	878,407	1,085,487
Gasoline	458,247	65,464	238,194	34,028	7,348,064	6,624,059
Kerosene	.....	.....	7,397	1,057	137,831	98,948

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	9,499	25,778
Asphalt	.....	.....	.....	.....	346,862	141,401
Lubricants	.....	.....	.....	.....	13,665	12,857
Foreign exports:						
Crude oil	84,894	12,128	119,779	17,111	2,709,262	1,476,737
Fuel oil	.....	.....	.....	.....	1,060,946	1,075,516
Diesel and gas oil	79,801	11,400	109,367	15,624	1,107,878	1,508,911
Gasoline	537,278	76,754	211,480	30,211	2,938,627	2,511,838
Kerosene	9,428	1,347	.....	.....	448,592	355,360
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	.....	.....	6,356	908	184,327	307,142
Coastwise-domestic:						
Fuel oil	83,160	11,880	76,411	10,916	3,148,197	3,114,336
Diesel and gas oil	36,914	5,273	.....	.....	735,534	460,693
Gasoline	159,623	22,803	165,438	23,634	3,319,796	2,187,207
Kerosene	.....	.....	.....	.....	281,609	84,935

Wilmington

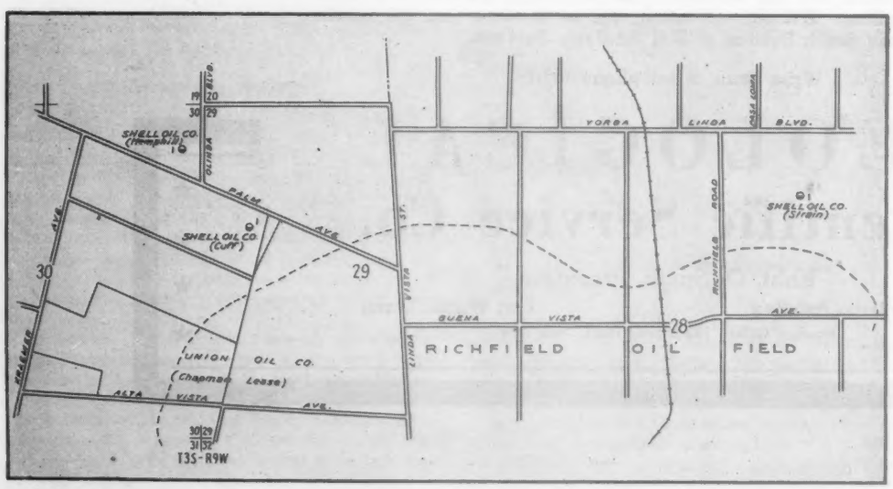
The largest well completed in the Wilmington field in the past week was Wilmington Oil & Development Co. No. 1 Terminal, finished in the Ford zone flowing 240 bbls. of 27.1-gravity oil daily from 5,700 feet after once having tested wet. Current production is not entirely clean and is not expected to improve much below its present cut of 9 per cent. Macson Oil Co. No. 55-1-G has been completed flowing 130 bbls. of 25.7-gravity oil per day from 3,663 feet after the hole had been finished with 730 feet of 6⅝-inch liner carrying perforations at 2,989-3,300 feet, 3,434-3,575 feet and at 3,629-63 feet and cemented through perforations at 3,414 feet and 3,629 feet. The small production of this well proved rather surprising in view of the large penetration taken although this section of the field is depleted.

Richfield Oil Corp., which for a time was the largest single operator in the Wilmington field, completed No. 1 Victory at 3,456 feet but it was good for only 138 bbls. of 19.9-gravity oil per day. This well was finished with 345 feet of 6⅝-inch liner including 302 feet of perforated landed at 3,455 feet.

The Long Beach Harbor Commission which has been able to secure the highest royalty payments ever recorded in California has received another set of bids that stand out as unusual. The last bids covered proposals to lease four acres in the turning basin and found 16 operators bidding. Westgate-Greenland Oil Co. offered a royalty of 60 per cent for the privilege of developing the acreage in addition to the payment of a cash bonus or an alternative bid of $180,000 out of the operator's share of oil until the cost of development has been liquidated and then a royalty of 50 per cent. Seaside Oil Co. bid $100,000 cash bonus and a royalty of 50½ per cent or a bonus of $30,000 and 60½ per cent royalty. Caminol Co. agreed to give 50 per cent of the oil until the cost of the well has been liquidated and 65 per cent royalty thereafter. C. C. Sumper bid 50 per cent royalty until three wells have been paid for and then 70 per cent thereafter. These high royalty bids are in keeping with previous bids and represent the highest royalty scale used in California fields.

Rio Bravo

Superior Oil Co. in the Rio Bravo field of Kern County completed No. 1 Anderson which was killed



Shell Oil Co. has started three outposts along the north flank of the Richfield district of Los Angeles Basin, all three being located along well defined bulges in the outer productive contour

in order to run in a liner. The well was completed barefoot last week flowing 6,122 bbls. of 35.4-gravity oil per day from 11,608 feet. It was finished flowing through 32/64-inch and 36/64-inch beans and showed a tubing pressure of 1,175 pounds and a casing pressure of 1,450 pounds. Upon being recompleted it was brought in flowing through a 22/64-inch bean and showed an initial of 1,250 bbls. of 35.4-gravity oil per day. Superior completed No. 4 Wagner in section 35-28-25, flowing 2,140 bbls. of clean 35.1-gravity oil and 4,000,000 feet of natural gas per day from 11,554 feet. This well was finished with a 7⅝-inch water string landed at 11,363 feet and a 5-inch perforated liner. Within the next few days Superior Oil Co. will have No. 2 Geissinger on production as drilling operations have been concluded at 11,360 feet with a 7⅝-inch water string cemented at 11,323 feet. Top of the oil sand was cored at 11,333 feet and the outlook is favorable. Superior should also complete No. 1 Helbling within a few days as this hole is down 11,250 feet. Union Oil Co., discoverer of the Rio Bravo field, is not experiencing much success in its redrilling job on No. 2-34 Kern County, bottomed at 11,204 feet but should have No. 3-34 Kern County Land ready for a production test within the next few days. The latter well has a string of 7-inch cemented on bottom at 11,206 feet and the crew is getting ready to resume drilling. No. 2-34 Kern County Land, the jinx well at Rio Bravo, is now held up with a fishing job resulting from the loss of a bit. Union has been making good progress with No. 4-34 Kern County Land and expects soon to have No. 5-34 Kern County Land making hole. Operators have been making such fast progress with drilling operations in the Rio Bravo field that new wells are now finished in less than 90 days. General Petroleum Corp. has just about completed the redrill job on No. 1 Wagoner in section 35-28-25, as the bit is now down 9,800 feet with bottom of the old hole at 10,192 feet. The crew of this company is making hole in No. 4 Wagoner a little below 1,500 feet and are preparing to set surface pipe. No. 3 Wagoner is still a rig but will get under way shortly.

Long Beach

Hilldon Oil Co. has proved the existence of probable Miocene production in the Los Cerritos section of the Long Beach field as its No. 1 Dominguez located in the flood-control area is swabbing 150 bbls. of 23.9-gravity oil per day from 7,786 feet. The well, the first to be drilled to the Miocene in the Hilldon area, does not have sufficient kick to result in a natural flow and if permitted to produce from the present point will have to be put on the beam. The company has not yet decided whether to drill ahead or attempt to make a commercial well at its present depth. About 50 feet of oil sand back of the shoe of the 7-inch water string landed at 7,377 feet may be tested before going ahead as this would give the well about 59 feet of sand from which to produce. It is believed the well will be drilled ahead before perforating the casing above the shoe. No. 1 Dominguez as it stands is good for about 250 bbls. per day on the beam and may even exceed this figure after pumping equipment has been installed. Earlier in the week Hilldon Oil Co. completed No. 4 Amebco flowing 100 bbls. of clean 26.9-gravity oil and 2,500,000 feet of gas per day from 4,494 feet after the hole had been finished with a 6⅝-inch liner. Two days later production of gas dropped to 1,750,000 feet daily and oil production increased to 160 bbls. which tends to indicate that crude oil production will increase still further after the gas head has been relieved.

Montebello

Union Oil Co. completed No. 1 Howard & Smith in the Montebello pool, and while the well produced in commercial quantities the output showed a cut of 55 per cent. It flowed 905 bbls. of net oil the first day from the Pliocene at 5,770 feet. Production is coming from the upper and lower sections of the fifth zone with the center part blocked off. No. 1 Howard & Smith was finished with 370 feet of 6⅝-inch Securaloy liner landed at 5,767 feet and carrying perforations at 5,676-5,721 feet and at 5,435-80 feet.

Belridge

In the North Belridge field, Tide Water Associated Oil Co. No. 3-21 in section 21-27-20, was completed flowing 1,303 bbls. of 30.1-gravity oil cutting 3 per cent and 1,234,000 feet of natural gas per day from the Wagonwheel zone of Eocene age at 8,478 feet. This well topped the Wagonwheel zone at 8,225 feet and was brought in flowing through a 48/64-inch bean and shows a tubing pressure of 625 pounds and a casing pressure of 1,600 pounds. The well was completed barefoot with an 8⅝-inch water string cemented at 8,325 feet. Belridge Oil Co. completed No. 26-35 in section 35-27-20, flowing 385 bbls. of relatively clean 34.1-gravity oil and 5,000,000 feet of natural gas daily from the Wagonwheel zone at 8,671 feet. This new well was finished flowing through a 1½-inch bean and showed a tubing pressure of 140 pounds and a casing pressure of 800 pounds. In the South Belridge field Chico Martinez Oil Co. has completed No. 1 Holly pumping 25 bbls. of 13.5-gravity oil daily from 1,020 feet after the hole had been carried down to 1,106 feet and then plugged back to the completion depth because of bottom water.

San Joaquin Basin

Hogan Petroleum Co. completed an excellent well in the Mountain View field late this week when No. 11 Porter Day in section 29-30-29 was finished flowing 3,024 bbls. of clean 28.5-gravity oil per day from 5,079 feet. This well is making a little better than 1,000,000 feet of natural gas daily along with the crude oil. Production is coming through a 1-inch bean and while drilling operations have been rather small in this area this new well will not cause any increase even though it is the best producer finished in this field in more than a year. Shell Oil Co. completed another new well in the Canal field of Kern County this week when No. 32-13-A in section 13-30-25, was brought in flowing 1,483 bbls. of very clean 36.7-gravity oil and 1,290,000 feet of natural gas daily from 8,285 feet. This new well which was carried down to 8,329 feet and then plugged back was completed flowing through two 1-inch beans but was pinched back subsequent to completion to 150 bbls. daily by reducing the bean to 7/64-inch.

In the McKittrick field of Kern County, Franco Western Oil Co. completed No. 15 in section 8-30-22,

(Continued on Page 96)

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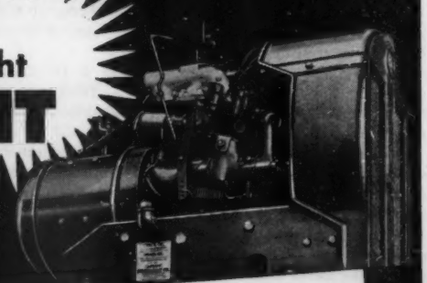

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Eastern Field Report

By STAFF CORRESPONDENT

Deep Tests in Pennsylvania Reach the Onondaga Sand

PITTSBURGH, Pa., July 4.—Two additional deep tests in Southwest Pennsylvania reached the Onondaga during the week. In Westmoreland County, the rotary test of Peoples Natural Gas Co. on the John S. Marshall farm on the Grapeville anticline in Penn Township topped the Onondaga at 7,443 feet. The first 40 feet of this structure presented no difficulty but the formation hardened limiting the daily progress. An attempt was made to core the Onondaga but it failed due to the hardness of the formation. At 7,502 feet the test was shut down and casing run to bottom and cemented in. After the cement has set, drilling will be resumed to the Oriskany.

In the other rotary test, that of South Penn Oil Co. and others on the Fred Backhaus farm on the Kellersburg anticline in West Deer Township, Allegheny County, drilling is progressing slowly. The tools penetrated the Onondaga approximately 10 feet during the 24 hours with the cone being changed each tour. After further study of the samples, it was determined there was sufficient lime present to call the top of the Onondaga 6,343 feet instead of the previous depth of 6,360 feet and the cherty lime at 6,364 feet. The present depth is 6,426 feet.

On Chestnut Ridge, Greensboro Natural Gas Co. topped the Onondaga at 7,360 feet in the deep test on the J. R. Thompson farm in Wharton Township, Fayette County. Top of the Tully lime was at 6,570 feet with lime showing to nearly 6,900 feet and lime interspersed with the shale to the Onondaga. The interval between the top of the Onondaga in this test and that of the discovery or No. 1 Heyn shows a thickening of almost 200 feet, all of which appears to be accounted for in the Tully lime itself. It is drilling at 7,387 feet. The hole is cased to 6,608 feet.

Completions in the lower Eastern fields consisted of a total of 23, of which 8 were dry, 7 gas wells, and 8 producers with a daily initial production of 137 bbls. Most of the new production was in Southeast Ohio.

SOUTHEAST OHIO

In Athens County, Ross, Weimer & Ross completed a fair shallow well on the G. P. Ackley farm on Pratts Fork, NE quarter section 19, Lodi Township. It was drilled in the Mitchell sand to 370 feet and produced 55 bbls. the first day and was not shot.

In Belmont County, Union Gasoline & Oil Corp. drilled on the Charles J. and Harry A. Hinkle farm, NW corner of section 20, Richland Township, through the Berea sand to 1,923 feet. It was dry.

In Jefferson County, N. E. Ellis No. 2 and others completed No. 5 James E. Ellis and others in the SE quarter section 29, Saline Township, in the Berea sand at 1,270 feet. It produced 1 bbl. the first day after shot.

In Licking County, G. S. Lacknett and others completed No. 7 W. W. Reynolds in section 16, Perry Township, in the Berea sand at 802 feet. It produced 20 bbls. the first day after shot. In the same section, Bebout Brothers completed a test on the Edward Wright farm in the Berea sand at 723 feet, and it produced 9 bbls. the first day after shot.

In section 10, Licking Township, Licking County, Ohio Fuel Supply Co. drilled on the P. R. Shartle farm through the lime to 2,334 feet and abandoned it. There was about 3,000 feet of gas and a slight showing of oil.

In Medina County, Preston Oil Co. completed No. 26 Bertha B. and J. J. Parent farm, Tract 16, Lot 5, Chatham Township, in the Berea grit at 349 feet. It produced 45 bbls. the first day after shot. In the same township, Lot 1, C. B. Wood drilled No. 3 D. O. Jividen to 427 feet, through the Berea grit, and it was dry.

In Perry County, Atha Oil Co. drilled No. 21 Melick Brothers, NE quarter section 20, Madison Township, through the Clinton sand to 3,175 feet and it gauged about 80,000 feet of gas and a very small showing of oil. It will be plugged.

In Washington County, Best Run Oil & Gas Co. completed a test on the John Mossburg heirs farm in section 21, Liberty Township, in the Keener sand at 1,474 feet, gauging 60,000 feet. In section 19, same township, Otto Heldman and others completed No. 3 Marion Epler heirs in the Second Cow Run sand at 1,180 feet gauging 40,000 feet. It is about 1,200 feet north of No. 1, same farm.

In Trumbull County, Norwood P. Johnston and others are still fishing casing on the G. M. Porter farm west of the crossroads at Mecca in Mecca Township.

SOUTHWEST PENNSYLVANIA

Two gas wells and a small producer were completed in Southwest Pennsylvania. In Center Township, Greene County, Union Gasoline & Oil Corp. drilled No. 4 Braddock & Cook through the Nineveh Thirty-foot sand and have about a 1-bbl. pumper.

In Greene Township, Greene County, Equitable Gas Co. deepened No. 1 S. G. Durr to 2,653½ feet with the Fifty-foot sand at 2,618 feet and 552,000 feet of gas at 2,640-47 feet. It has been tubed and run in the line.

In Fayette County there was an unusual strike in the test of Fox Brothers on the Ricks farm in Menallen Township. In the Injun sand at 1,390 feet, there was a gauge reported as high as 6,000,000 feet a day. Several other wells are drilling in the vicinity.

In Washington County, Union Gasoline & Oil Corp. reached 2,479 feet in the No. 2 Leroy Vankirk. F. K. Fawcett and others are repairing damage done by fire in the No. 1 L. Bronder, which is standing with a hole full of oil at 3,001 feet.

In Hanover Township, Washington County, Coulter & Duncan are drilling on the John Denis farm and have reached 1,140 feet. In North Strabane Township, Beedle & Debone have reached 2,540 feet deepening on the John Arblaster farm with the Nineveh Thirty-foot sand at 2,411-36 feet showing 100,000 feet of gas at 2,413 feet; Fifty-foot sand 2,333-68 feet, and some gas at 2,362 feet.

Penn Ohio Oil & Gas Co. is drilling at 775 feet on the W. E. Davis farm, North Strabane Township. In Buffalo Township, no progress has been made on the Antonio Provenzano farm.

Greene County

In Franklin Township, Greene County, Equitable Gas Co. is getting ready to deepen No. 1 W. L. Jacobs. In Jackson Township, this company is down 3,235 feet deepening No. 1 C. S. Orndoff; in Center Township it is at 3,505 feet on the C. J. Conklin farm.

In Richhill Township, Furman Nuss is drilling at 1,710 feet in No. 2 Charles Swart. Penn Ohio Oil & Gas Co. has rig up for No. 1 H. W. Ealy (Conklin).

In Center Township, Charles L. Mong is down 900 feet in No. 3 Jess Metz (Weir). J. B. Orndoff is redmudding casing at 1,539 feet in No. 2 G. M. Scott.

Deep Tests

On Chestnut Ridge, Wasson & Co. have reached 3,650 feet on the J. H. Sorg farm in North Union Township, Fayette County. In Springhill Township, 1.1 miles north of the West Virginia line on this structure, L. J. Houze Convex Glass Co. is drilling at 5,400 feet in the test on the Paul Dunham farm.

In Beaver County, John T. Galey and others have reached 1,400 feet on the Eliza Allen heirs in South Beaver Township. The 8¼-inch casing was set at 1,087 feet.

WEST VIRGINIA

Two small producers were completed in West Virginia. In Boone County, Pure Oil Co. completed No. 42 Lafollette, Robson & Prichard, in Sherman district, at 3,172 feet showing 3 bbls. a day from the Berea sand.

In Hancock County, R. J. Braden Co. completed No. 54 C. E. Brenneman in Grant district in the Berea sand at 976 feet, good for 4 bbls. a day, initially.

Gas Wells

In Cabell County, Toms Creek Gas Co. completed the Lee Davis test in McComas district in the Brown shale at 3,714 feet, gauging 100,000 feet before shot.

In Gilmer County, Hope Natural Gas Co. completed No. 7,808 on the C. O. Rafferty farm in DeKalb district in the Injun sand at 2,086 feet, gauging 100,000 feet. In Center district, H. B. Scott abandoned the C. W. Teman and others test at 2,414 feet. There was a sand shelf at 2,388-99 feet with about 25,680 feet of gas at 2,388-99 feet.

In Ritchie County, Dr. E. S. Woodyard and others drilled on the Z. Darnell farm in Clay district through the Cow Run sand to 1,046 feet and it was dry. In Grant district, William M. Schroeder, agent, drilled on the P. M. McGinnis farm through the Injun sand to 1,834 feet, which was dry. An oil show in the Big lime will be tested.

Outside Deep Tests

In Jackson County, United Carbon Co. has reached 2,153 feet on the Elizabeth Ward Perkins farm in Washington district. In Ravenswood district, Joe Rubin and others are drilling at 2,572 feet on the W. J. Brown farm. In Ripley district, Cunningham Gas Co. has a fishing job just above the lime on the E. F. Cunningham farm.

In Pleasants County, Columbian Carbon Co. is drilling at 1,800 feet on the Burning Springs anticline in Grant district on the Hammat heirs farm. In Wood County, W. H. Bickel has not started deepening on his own property in Lubeck district now cased in the Corniferous lime.

In Steel district, Wood County, Belmont Quadrangle Co. abandoned its test on the C. D. White farm after drilling through the Oriskany which was dry.

Oriskany Gas Field

One well was completed in the Oriskany gas pools in Kanawha County. In Union district, West Virginia Gas Corp. completed the test on the J. E. Layne and others farm with the Oriskany topped at 4,887 feet and a final depth of 4,931 feet. The gauge after shot was 1,426,000 feet.

One new location was announced. In Elk district, Kanawha County, Columbian Carbon Co. has a location on the Bratton Hanna farm with a surface elevation of 915 feet. In this district, Columbian Carbon Co. is drilling at 110 feet in the W. B. Fogarty test; at 4,913 feet in the B. F. Jones test; at 1,750 feet in No. 12 C. W. Vickers. In Malden district, the North Eight Producing Co. topped the Oriskany sand at 4,853 feet on the L. E. and R. Belcher farm.

In Poca district, Guy B. Ray topped the Corniferous lime on the Emmett Thaxton farm at 4,846 feet and is drilling at 4,937 feet. Mullins Gas Co. topped that formation at 4,990 feet on the Esta Fisher Bonham farm and is down 5,015 feet. Columbian Carbon Co. reached the Corniferous lime at 4,765 feet on the Boyd Castro farm and is drilling at 2,880 feet in the Johnson & Gibson test; at 1,160 feet in the L. P. Rollins test; and at 400 feet in the Lena Castro test with a rig on the W. H. O'Dell and others test.

In this district, United Fuel Gas Co. is down 1,150 feet on the W. J. Glass and others farm; at 1,794 feet on the I. W. Cavender farm; at 1,434 feet on the W. J. Glass farm; at 3,030 feet in the W. A. Fisher and others test; building rig for O. V. Milam and others test; rig-

(Continued on Page 97)

North and East Texas

By MITCHELL TUCKER

Deep Ellenburger Wildcat in Wichita County Looks Good

WICHITA FALLS, Tex., July 4.—The deep wildcat being drilled by Continental Oil Co. and Petroleum Producers Co. on state asylum lands, Block 1, in southern Wichita County, 3 miles south of Wichita Falls, was the center of interest last week. Saturation was logged in lime and sandy lime from 5,076-5,129 feet, and casing cemented at 5,075 feet. Operators plan to drill the plug and test soon in the pay level believed to be the Ellenburger which Fain & McGaha and Humble Oil & Refining Co. logged at their No. 1 Fuller, about 2 miles south in Archer County.

On the southwest side of the K.M.A. pool, Shell Petroleum Corp. and Phillips Petroleum Co. No. 1 Riley, which had been considered a dry hole although testing has been in progress for several weeks, made a steady flow of 55 bbls. of oil in four hours to indicate it may yet make a producer.

Archer County

Adams Oil & Gas Co. No. 1 Moer, which opened a field in eastern Archer County 1 mile east of Scotland recently, is swabbing and flowing alternately, while operators are attempting to complete it. The well flowed 42 bbls. of oil in six hours and ceased. It will probably be put on the pump, although pressure builds up considerably when shut in for a few hours and it may flow by heads.

Two miles southwest of the Panther field, Reno Oil Co. No. 10 Wilmont, which has been in the testing stages for several weeks, is indicating commercial production. The well is estimated good for 20 to 25 bbls. daily after having been treated with acid from 3,780-95 feet. In the same pool, Blackwell Oil & Gas Co. and Helmerich & Payne, Inc. No. 1 Wilson-McRory, which indicated the third and deepest producing horizon in the area, was drilling plug to test showings encountered at 4,356 feet.

Cooke County

Another deep wildcat has been staked in the Walnut Bend field of northeastern Cooke County, recently opened from the 4,900-foot level. Fain G. Gillock has made location for No. 1 fee in the T. Ward Survey, just one location north of Sinclair Prairie No. 1 Best, discovery well. Although projected to 7,000 feet, it is expected the well will seek production from the discovery horizon.

Young County's new field opener, Homestead Oil & Gas Co. No. 1 J. F. McKnight looked like a large producer last week as it tested 1,275 bbls. per day from the Caddo lime from 3,762-75 feet. It is 2 miles southwest of Graham.

Jack County received a new wildcat last week when G. M. Gillespie staked a location in the Oliver Loving lands, 8 miles north of Bryson, in the area of two dry holes sunk by him in the past year.

Wilbarger County got another deep test when Consolidated Oil Co. announced location for No. 1 G. B. Ancell, in section 35. Contracted to 4,200 feet, it is in the southeast corner of the county and about 2 miles north of the 4,200-foot dry hole on the Waggoner ranch drilled by Lloyd H. Brown and associates several months ago.

NORTH TEXAS COMPLETIONS

Archer County

Hines & Hancock No. 1 W. R. Hammond, 3,753 feet, dry. F. King No. 1 Koenig, abandoned location. Lacreta Petroleum Co. No. 1 L. H. Farmer, abandoned location.

Clay County

Brashear Drilling Co. No. 1 Mrs. D. E. Bentley, 1,349 feet, dry. Bridwell Oil Co. No. 1 Saner B, 1,130-67 feet, 10 bbls. L. L. Deaton No. 1 C. C. Bunninburg, 1,354 feet, dry. Sussex Oil Corp. No. 13 Shumake, 1,134-65 feet, 70 bbls.

Cooke County

Sinclair Prairie No. 1 J. M. Best, 4,875-4,900 feet, 950 bbls.

Jack County

A. T. Gray and others No. 2 M. Covington, 374-88 feet, 14 bbls. Hunter and others No. 2 M. Covington, 353-66 feet, 11 bbls.; No. 3 M. Covington, 365-70 feet, 12 bbls. Martex Oil Co. No. 2 A. B. Kuykendall B, 3,165-94 feet, 354 bbls. Carl Moore No. 1 Myers, 375 feet, dry. Peery & Woody No. 10 Raley B. 2,914-43 feet, 100 bbls. H. Peterson No. 4 C. Henderson, 377-44 feet, 5 bbls. C. B. Pruet No. 3 M. Covington, 350-71 feet, 12 bbls. Scanlon & Ford No. 1 W. H. Smith, 385 feet, dry. C. T. Thornton No. 7 Bloodworth, 315-450 feet, 1 bbl. Henry Whitmer II No. 1 J. Hitchcock, 325-32 feet, 10 bbls.

Wichita County

D. H. Bolin No. 1 D. R. Preston, 3,940-80 feet, 600 bbls. Bolin & Whittington No. 3 Waggoner, 3,926-55 feet, 600 bbls.; No. 5-A Waggoner, 899-916 feet, 30 bbls. Bridwell Oil Co. No. 2 Mrs. Anna Mangold, 3,744-3,833 feet, 1,144 bbls. R. B. Bryant No. 3 G. L. Nance, 3,718-3,820 feet, 1,064 bbls. Burk Royalty Co. No. 1 Sue Mitchell B, 3,819-79 feet, 864 bbls. Continental Oil Co. No. 5-B Waggoner, 3,765-3,814 feet, 352 bbls. Deep Rock Oil Corp. No. 3 E. H. Hamilton, 3,710-3,826 feet, 1,992 bbls. Dorian and others No. 2 Sue Mitchell 3,855-3,906 feet, 1,096 bbls. Golding & Cochran No. 25 Waggoner C, 3,751-3,801 feet, 640 bbls. Grace & Wood No. 4 W. L. Hodges, 3,775 feet, junked.

Hoppes & Newell No. 5 J. A. Seay, 3,626-3,825 feet, 1,800 bbls. Hubbell Producing Co. No. 6 W. L. Hodges, 3,774-3,803 feet, 600 bbls. Manson Oil Co. No. 2 Fassett & Tuttle, 3,915-74 feet, 920 bbls. M-L Drilling Co. No. 3 First National Co., 3,680-3,859 feet, 720 bbls. W. B. Omohundro No. 11 D. E. Hooks, 3,685-3,856 feet, 984 bbls. George Proctor No. 34 Ed Foster A, 1,667-86 feet, 116 bbls. Shell Petroleum Corp. No. 1 Reilly, 3,815-88 feet, 864 bbls. Sinclair Prairie No. 1 J. H. Martin, 3,750-3,818 feet, 240 bbls. White & Duncan No. 15 K. T. Goetze, 1,686 feet, dry.

Young County

Phillips Petroleum Co. No. 205 W. T. Waggoner, 3,024-38 feet, 712 bbls.

Wilbarger County

Black Gold Oil Corp. No. 1 W. F. Bridges, 3,861-4,065 feet, 16 bbls. Cosden Oil Corp. No. 1 D. D. Sewell, 3,774-3,954 feet, 310 bbls. Duncan and others No. 33 Venson A, 911 feet, dry. Wirt Franklin No. 1 Rubenkoenig, 4,294-4,634 feet, 5 bbls. Homestead Oil & Gas Co. No. 1 J. F. Knight, 3,764-75 feet, 1,233 bbls. Labusan No. 1 Self, 782 feet, dry. Lupton & McLester No. 7 Gibson, 3,660-90 feet, 400 bbls. Pemeta Oil Co. No. 7 J. L. Jordan, 658-70 feet, 20 bbls.

EAST TEXAS DISTRICT

Flag Lake Field

DALLAS, Tex., July 4.—The Flag Lake pool of northwestern Henderson County had another setback last week when an outpost 2½ miles east of the field was abandoned. Hi-Point Oil Co. No. 1 Dan Smith, F. Brown Survey, drilled 59 feet of Woodbine sand without any showings of oil or gas. A producer and extensioner on the southwestern side was assured when Texas Co. No. 2 Nolen, south offset to its No. 1 Nolen, which extended the pool 1½ miles southwest, was awaiting official gauge. The well cored 5 feet of saturation below 3,048 feet. A new outpost test was made at Texas-Canadian Oil Co. No. 1 Russom Mallory, where material is being moved in about 2½ miles southeast of the field.

Long Lake Field

The first stage separation and gas recycling plant in the Long Lake field of Anderson County is nearing completion and will be placed in operation soon. Want of market outlet for gas at Long Lake has retarded development of the 10,000-acre proven gas area for many years, and the advent of recycling in the high-pressure formations may add greatly to the value of properties in that vicinity. Byrd-Frost, Inc. of Dallas constructed the plant and drilled an input well for the purpose of returning gas to the formation at about 2,000 pounds pressure.

Limestone County

A new 6,000-foot test was announced for Limestone County last week by A. F. Tarver as his No. 1 C. E. Herod, 3½ miles northeast of Thornton. The test will be drilled into the basal Glen Rose of Lower Trinity age, and operations are to start in the near future.

In Anderson County's old Boggy Creek pool, Joe A. Sanders announced plans to drill two tests. This field has been producing for several years, but has not recently had any new activity. The 103-acre L. Smith tract has been chosen for the tests.

EAST TEXAS FIELD COMPLETIONS

(One-hour test)

Gregg County—Longview Area

Arkansas Fuel No. 15-B McKinley, 3,558-83 feet, 64 bbls. Atlantic-Stanolind No. 20 S. C. Fishburn, 3,482-3,574 feet, 98 bbls. General American No. 3 Clements, 3,530-57 feet, 40 bbls. Humble Oil & Refining Co. No. 37 W. W. Holland, 3,594-3,600 feet, 58 bbls. Lester-Duffield No. 10 J. Moore, 3,551-55 feet, 42 bbls. Joe Long Drilling Co. No. 35-A W. W. Owens, 3,657-60 feet, 64 bbls. P. F. Phillips and L. & G. Oil Co. No. 1 Greggston & McCormic, 3,584-86 feet, 20 bbls. Stanolind Oil & Gas No. 14 Adrian-McCrary, 3,446-3,512 feet, 46 bbls.

Gregg County—Kilgore Area

Atlantic-Byrd-Frost No. 12 Smith, 3,551-59 feet, 98 bbls. B. F. Carroll No. 2 Laird, 3,542-58 feet, 18 bbls. Gulf Oil Corp. No. 6 E. L. Walker, 3,526-39 feet, 30 bbls. T. W. Lee No. 19 J. R. Carter, 3,599-3,600 feet, 30 bbls. Shell Petroleum Corp. No. 21-A M. H. Bivins, 3,539-3,653 feet, 54 bbls.; No. 43 W. W. Elders, 3,551-3,670 feet, 40 bbls.; No. 46 W. W. Elders, 3,524-3,630 feet, 54 bbls.; No. 47 W. W. Elders, 3,526-3,646 feet, 54 bbls.; No. 10 M. J. Register, 3,612-38 feet, 44 bbls.

Rusk County—Kilgore Area

Delta Drilling Co. No. 5 C. E. Christian, 3,662-64 feet, 60 bbls. General American No. 10 T. H. Gill, 3,615-38 feet, 40 bbls. Magnolia Petroleum Co. No. 17 D. Wills, 3,651-52 feet, 56 bbls. Mid-States Oil Corp. No. 11-B Brightwell, 3,644-65 feet, 108 bbls. Tide Water No. 19 H. P. Leverett, 3,675-95 feet, 60 bbls.

Rusk County—Joiner Area

Hunt Oil Co. No. 37-C R. W. Fair, 3,675-94 feet, 75 bbls.; No. 38-C R. W. Fair, 3,605-12 feet, 75 bbls. Hunt-Crews & Maddox No. 6 R. A. Motley, 3,811-12 feet, 31 bbls. Hurricane Petroleum Co. No. 7 W. P. Keeling, 3,722-33 feet, 50 bbls. Magnolia Petroleum Co. No. 11 A. Perkins, 3,608-30 feet, 40 bbls. Ohio Oil No. 39 E.

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Central West

By STAFF CORRESPONDENT

New Operations Continue to Exceed Illinois Completions

CENTRALIA, Ill., July 4.—Twenty-seven oil wells and seven dry holes were completed in the Illinois fields in the past week in review. The initial production totaled 6,574 bbls., or about 243 bbls. per well. A 500-bbl. well in the shallow Centralia townsite pool was a feature of the week as it was one of the largest, if not the largest, initial production recorded on the townsite.

Fifty-two new operations were accounted for in Sangamon, Morgan, Fayette, Jasper, Marion, Richland, Clay, Clinton, Lawrence, Wayne, Wabash and Jefferson counties. Twenty-one new starts were made in the Centralia field, 13 on the Clinton County side and 8 on the Marion County side.

Completed wells with their sand record and initial 24-hour production are given below by counties:

In Christian County, Indiana Producing & Refining Co. No 1 Warren, SW SW SW section 23-11n-1e, was dry and abandoned at 1,727 feet. It topped Ste. Genevieve limestone at 1,645 feet.

In Clark County, Stipes and others No. 1 Dougherty, SE NW NW section 10-11n-14w, made a 5-bbl. pumper from sand at 465-70 feet.

In Fayette County, Carter Oil Co. No. 2 Logsdon, SE NE NW section 15-8n-3e was drilled to 1,690 feet and plugged back to 1,580 feet. It was shot with 35 quarts at 1,647-81 feet and pumped an initial of 68 bbls. Minerva Oil Co. and others No. 1 Tish, NW NW SE section 33-8n-3e, was completed in Benoist sand at 1,562-80 feet. Shot with 10 quarts, it made an initial production of 252 bbls. flowing through casing, with the tubing in the hole.

In Effingham County, Kingwood Oil Co. and others No. 1 McWhorter, C E half SE NW section 15-6n-6e, drilled to 5,823 feet without finding production, and the hole has been temporarily abandoned. Devonian was topped at 4,110 feet; Silurian at 4,740 feet, and Trenton at 5,280 feet.

In Jasper County, Obermyer No. 1 Atkins, NW NW NE section 3-6n-9e, was reported abandoned at a depth said to have been 2,687 feet.

In Crawford County, Ohio Oil Co. abandoned the location for No. 12 Boyd, SE cor. NE NE NE section 36-6n-12w.

Richland County

In Richland County, Pyramid Oil Co. No. 2 University of Chicago, SW SE SW section 23-4n-10e, was dry and abandoned at 3,127 feet. It had only a showing of oil in oolitic lime at 3,113 to 3,122 feet. The Texas Co. No. 1 Zirkle, E half SW SW SW section 23-4n-10e, was abandoned at 3,125 feet. It was acidized with 1,000 and 5,000 gallons at 3,046-59 feet. No net oil was recovered.

In Richland County, Mammoth Producing & Refining Co. No. 1 Allen Yount, NE SE NE section 29-3n-9e, pay at 3,015-22 and 3,039-43 feet, was acidized with 1,500 gallons and flowed 426 bbls. of oil initially. Mammoth Producing & Refining Co. No. 2-A Glenn Stewart, SW NW NW section 28-3n-9e, pay at 3,042-48 feet, acidized with 2,000 gallons, flowed 132 bbls. in 24 hours.

In Clay County, Pure Oil Co. No. 3 B. Travis-B found pay at 2,970-95 feet, and flowed 856 bbls. of oil, naturally, in 24 hours.

In Clay County, Pure Oil Co. No. 3 Tetrick A, C E half SE NW section 9-2n-8e, pay at 2,970-76 feet, 2,986-88 feet, 2,993-97 feet, a showing at 2,997-3,003 feet, total depth 3,037½ feet, flowed 937 bbls. naturally in 24 hours. Pure No. 2 Bunn Consolidated, C W half NW NW section 16-2n-8e, pay at 3,003-07 feet and 3,030-37 feet, total depth 3,060 feet, flowed 617 bbls. in 24 hours, naturally.

In Clinton County, F. Heldt No. 1 Lampin, SW SE NW section 16-1n-2w, was dry and abandoned at 1,509 feet. It topped Fredonia at 1,434 feet and had a showing of gas at 1,474-77 feet. Newton & Ward No. 3 Frank Gross, SE cor. SW section 5-1n-3w, was shot with 20 quarts in Cypress sand at 959-80 feet and pumped 70 bbls. of oil initially.

In the Clinton County side of the Centralia pool, Shell Petroleum Co. No. 3 Hanseman, SE SW SE section 1-1n-1w, had Benoist sand at 1,353-64 feet, and pumped 43 bbls. of oil and 23 bbls. of water after an 8-quart shot. Shell No. 6 Allison, SE NW SE section 12-1n-1w, had Benoist sand at 1,354-78 feet, was shot with 21 quarts, and pumped 66 bbls. of oil and 24 bbls. of water. Adams Oil & Gas Co. No. 1 Rothemeyer, NE SE SE section 13-1n-1w, Benoist sand at 1,342-70 feet, shot with 15 quarts, pumped 109 bbls. in 24 hours. Adams No. 2 Rothemyer, NE cor. SW SE SE section 13-1n-1w, Benoist sand at 1,351-73 feet, shot with 10 quarts, pumped 115 bbls. in 24 hours.

Marion County

In the Marion County side of the Centralia pool, T. R. Tennant No. 1 Smith, CEL SE NW NW section 19-1n-1e, Benoist sand at 1,375-90 feet, pumped 160 bbls. initially. Semmil & Cole No. 1 Ruth Cade, SE NW NW section 18-1n-1e, Benoist sand at 1,367-82 feet, shot with 5 quarts, pumped 65 bbls. Joe Murphy Drilling Co. No. 1 fee and others, CNL NW NE NW section 19-1n-1e, Benoist sand at 1,368-70 feet, pumped 56 bbls. Joe Murphy No. 1 fee, in Block 68, NE cor. NW SE SW section 18-1n-1e, sand at 1,366-84 feet, shot with 10 quarts, pumped 150 bbls. W. B. Johnson Drilling Co. No. 1 Home B. & L., C NW NW section 18-1n-1e, sand at 1,368-83 feet, shot with 10 quarts, pumped an estimated 120 bbls. W. R. Hayes No. 1 Storer, SE NW SW section 18-1n-1e, sand at 1,342-76 feet, shot with 10 quarts, pumped an estimated 375 bbls. W. R. Hayes and others No. 1 Midwest Dairy, SW cor, NE SW section 18-1n-1e, sand at 1,350-78 feet, shot with 10 quarts, pumped an initial of 500 bbls., one of the largest wells in the pool thus far. Hawley and others No. 1 Storer, SW SW NW section 18-1n-1e, sand at 1,365-77 feet, shot with 30 quarts, 150 bbls. on the pump. Hawley Oil Co. No. 1 Reading, NW cor. SW SW SW section 18-1n-1e, Cypress sand at 1,205-23 feet, total depth, shot with 20 quarts, pumped 100 bbls. J. Q. Gill and others No. 1 Carl McBride, CNL NW SW SW section 18-1n-1e, sand at Benoist sand at 1,336-63 feet, no shot, pumped 250 bbls. in 24 hours. Gill and others No. 1 Laughlum, NW SW SW section 18-1n-1e, shot Benoist sand at 1,340-71 feet, shot with 10 quarts, pumped an estimated 250 bbls. J. Q. Gill No. 1 Presbyterian Church, NE SW NW section 18-1n-1e, sand at 1,356-80 feet, shot with 5 quarts, pumped 20 bbls. (not completed). Cypress Oil & Gas Co. No. 1 Mrs. Prill, NE SW NW section 18-1n-1e, sand at 1,374-86 feet, shot with 5 quarts, pumped 15 bbls. (not completed). George S. Anderson No. 1 Gerron, SW SW SW section 7-1n-1e, sand at 1,372-91 feet, shot with 10 quarts, pumped 150 bbls. Fairhope Oil Co. abandoned location for No. 1 Mentler, SE cor. NW NW NW section 19-1n-1e. Toronto and A. B. Prather No. 1 Gudder, Lot 11, Block 44, NW NE SW section 18-1n-1e, sand at 1,356-80 feet, shot with 10 quarts, pumped an estimated 350 bbls.

In Wabash County, Ridge Farm Oil & Gas Co. No. 9 Price, SE cor. SW NW NE section 14-1n-12w, had sand at 1,558-64 feet and pumped 65 bbls. per day, without a shot.

In Jefferson County, Carter Oil Co. No. 1 Stover, SE SE NE section 9-1s-2e, had Benoist sand at 1,960-75 feet. Shot with 15 quarts, it pumped 246 bbls. per day.

In Wayne County, Texas Co. No. 3 Silverman, C W half NW NW section 16-3s-7e, was dry and abandoned at 3,460 feet, 10 feet in the St. Louis lime. There was no McClosky pay.

In White County, Palmer Corp. No. 1 Ziegler & White, SW NW SE section 3-5s-9e, was dry and abandoned at 3,408 feet. Fredonia was topped at 3,352 feet.

Fifty-two new operations were started in the state in the past week, as follows:

In Sangamon County, Williams & Wittlenger No. 1 Roy King, C SE NE section 24-15n-7w, shut down at 1,250 feet for repairs.

In Morgan County, George Parker No. 1 Dora Hubbs, SE cor. NE NE section 33-14n-8w, spudded.

In Fayette County, W. F. Lacy No. 1 Herman Buzzard, SW NE SE section 34-9n-3e, a wildcat, drilling at 500 feet. Carter Oil Co. No. 3 Logsdon, C E half NW NE section 15-8n-3e, drilling at 110 feet; Carter No. 3 Dove, C S half S half NW section 13-8n-3e, location; Minerva Oil Co. No. 2 Tish, NW NE SE section 33-8n-3e, moving in rotary; Carter No. 1 H. L. Lilly, SE NE SW section 16-8n-3e, rig up; Carter No. 4 Logsdon, C W half NE NE section 15-8n-3e, location; Minerva Oil Co. No. 1 Arthur Vercruysse, NW SE SE section 4-7n-3e, a wildcat, rigging up standard tools.

In Jasper County, Continental Oil Co. No. 1 Eveland, NW NW NW section 33-7n-9e, a location; Kingwood Oil Co. No. 1 Harrison, C SW SW section 2-7n-10e, moving in rotary tools.

In Marion County, Arch Carpenter Drilling Co. No. 1 Illinois Central Railroad, CWL NW SE section 28-4n-1e, rigging up rotary.

In Richland County, Texas Co. No. 4 Zerkle, C N half SW SW section 23-4n-10e, rig up; Pyramid Oil Co. No. 2 George Sly, NE SE SE section 22-4n-10e, rig up; Fortney Oil Co. No. 1 E. G. Miller, SW SW NW section 26-4n-10e, location

In Clay County, Ohio Oil Co. No. 1 Hardy, NW SW SE section 9-3n-7e, location; Pure Oil Co. No. 1 C. D. Duff, 35 feet south of C E half SE NE section 32-3n-8e, cellar and pits; Pure Oil Co. No. 2 Almon Mosely, C W half SW NW section 35-3n-8e, location.

In Richland County, Pure Oil Co. No. 10 Charles Wilkins, C E half SE SE section 29-3n-9e, location

In Lawrence County, Chester Harris and others No. 1 Hurt, 1,120 feet from north and 660 feet from east lines of NE SW section 22-3n-11w, rigging up machine.

In Clay County, Pure Oil Co. No. 2 J. Earl Mosely A, C N half NE SW section 16-2n-8e, cellar and pits; Pure No. 4 Tetrick-A, C W half SW NE section 9-2n-8e, cellar and pits.

In Wayne County, Lake & Allen, NE NE NW section 22-2n-9e, rig.

Clinton County

In Clinton County, Newton & Ward No. 4 Frank Gross, 520 feet from south and 150 feet from east lines SW quarter section 5-1n-3w, a location. Santa Fe Oil & Gas Co. No. 5 Robbin, SW cor. SE section 5-1n-3w, rigging up machine. In the Centralia pool, Hawley Oil & Gas Co. No. 1 Mussel, SE cor. NE NE NE section 24-1n-1w, drilling at 400 feet; Shell No. 2 Lippert, SE SE NW section 1-1n-1w, set 7-inch casing at 43 feet. Shell No. 1 F. Hanseman, NW NW SE section 1-1n-1w, cellar and pits; A. B. Potter No. 1 Hanseman Estate, 1,050 feet from west and 100 feet from south lines of SW SE section 1-1n-1w, drilling at 950 feet; Hardy and others No. 1 Ross, SE NE SE section 12-1n-1w, drilling at 450 feet; Roberts Brothers No. 1 Sisson, SE cor. NE NW NE section 24-1n-1w, Benoist sand at 1,379-82 feet, set 4¾-inch casing at 1,379 feet; Rogers Lacy No. 1, on Lot 18, Block 1, Finney Heights, in NE NE NE section 24-1n-1w, rig up; C. A. Sheppard No. 1, Lot 20, Block 2, Finney Heights, NE NE NE section 24-1n-1w, drilling at 220 feet; O. L. Ray and others No. 1 Langenfeld, SW cor. NW NE NE section 24-1n-1w, rig up; O. L. Ray and others No. 3 Home B. & L., in NW NE NE section 24-1n-1w, Benoist sand at 1,370 feet, set 5½-inch casing on top of Benoist sand at 1,370 feet; John Pugh Drilling Co. No. 1 Wehner, NE cor. SE SE section 13-1n-1w, showing of oil and water at 1,371-76 feet, total depth

1,382 feet, circulating; W. C. McBride, Inc., No. 2 Allison, SW cor. SE NE section 12-1n-1w, rig up.

In Marion County, Centralia field, Samuels & Dyke No. 1 Brueggman, 1,200 feet from west and 660 feet from south lines of SW quarter section 27-1n-1e, a wildcat, drilling at 1,424 feet; J. P. Ostrom No. 1, Lot 1, Block 1, A. P. Crosby Addition, NW cor. NE NW section 19-1n-1e, drilling at 335 feet; Capitol City Development Co. No. 1 D. N. Hubbard, NE SW NW section 19-1n-1e, drilling 150 feet; Frontier Oil Co. No. 1 Cobb, near SE cor. NE NE SW section 18-1n-1e, location; J. P. Ostrom No. 1 Harvey, near NE cor. SW NW NW section 19-1n-1e, rig up; W. F. Laig No. 1 Cole, SE cor. SW SW section 18-1n-1e, drilling at 490 feet; John Pugh Drilling Co. No. 1 F. W. Webster, SE SE SW section 18-1n-1e, rig up; Texas Co. No. 1 H. V. Corbin, 260 feet from west and 660 feet from north lines NW quarter section 5-1n-2e, moving in rotary tools.

In Wabash County, J. D. Toomey Estate No. 18 Courter, 900 feet from south and 850 feet from west lines NW quarter section 3-1n-12w, rigging up machine; Adams Corner Oil & Gas Co. No. 9 Holsen & Dorney, SW cor. NW SW NW section 18-1n-11w, rigging up machine.

In Jefferson County, J. Q. Gill No. 1 Edward Smithy, CWL NW NE NE section 6-1s-1e, drilling at 1,468 feet, show of oil at 1,051-57 feet and 1,261-68 feet; Carter Oil Co. No. 1 Dobbs, SE SE NW section 10-1s-2e, location.

In Wayne County, Texas Co. No. 4 Silverman, C W half SE NW section 16-3s-7e, location; Sloan & Allen No. 1 Phillip Walker, NW NW NW section 16-3s-9e, rig up.

WESTERN KENTUCKY

OWENSBORO, Ky., July 4.—Three new completions in the Henderson County side of the Birk City pool, good for 440 bbls., 300 bbls. and 250 bbls. respectively, all producing from McClosky lime, were the features of the week in Western Kentucky in the past week. Five oil wells, one gas well and four dry holes were reported from the various counties in the district. Across the Green River in Daviess County the Major Oil Co. No. 1 Onis Greer will be completed as soon as a cable-tool rig arrives to drill the well in. It has been ready for completion about two weeks. On the Henderson County side of the field three wells are ready for completion.

I. B. Hamilton and Frank Hamilton of Tulsa announced Saturday that they had let contracts to Hall & Booth, drilling contractors, for two 1,900-foot wells to be put down on the Birk City school lot. Equipment is being moved onto the lot. The operators also announced that they had acquired a 10,000-acre block in Todd and Christian counties, where development will start soon. The acreage is near Fairview and Pembroke.

Completions, near-completions and new operations in Western Kentucky in the past week follow:

Breckinridge County, Glen Dean district: Glasscock & Flesher No. 2 Exodus Embry, drilling at 400 feet. Eight miles south of Leitchfield: L. C. Young No. 1 Rig Nash, drilling at 750 feet. Cloverport district: Flesher & Galey No. 1 J. W. White, dry hole at 1,800 feet, 104 feet in Corniferous lime.

Daviess County, Birk City district: I. B. and Frank Hamilton No. 1 Birk City School Lot, rig up. Major Oil Co. No. 1 Onis Greer, waiting for cable rig to drill in. Major Oil Co. and others No. 1 Mrs. H. Harrington, set surface pipe at 135 feet. Utica district: Schaffer and others No. 4 Boyd Bristow, drilling at 200 feet. C. E. Daugherty and Ellis No. 3 Rex O'Flynn, 40 bbls. per day, Jett sand, total depth 1,095 feet.

Hancock County, Pellville district: C. D. Walker and others No. 7 Elmer Boling, 5 bbls., Jett sand 356-81 feet, total depth 390 feet. O. D. Vickers and others No. 1 George Morse, dry hole, total depth 594 feet. Easton district: J. B. Mayers and others No. 12 Jess Stewart, spudding in.

Henderson County, Birk City district: A. E. Roscoe No. 1 Ollie Benham, pumping 440 bbls. of oil per day. Hoosier Drilling Co. No. 3 C. T. Blackwell, estimated 250 bbls. per day, McClosky pay 1,867-93 feet, acidized with 1,500 gallons; No. 4 C. T. Blackwell, shut down at 1,850 feet to move in cable tools to drill in; No. 5 Blackwell, drilling at 800 feet. Carter Oil Co. No. 2 O. L. Boswell, estimated at 300 bbls. per day, McClosky saturation at 1,889½-1,902 feet; No. 3 Boswell, shut down to drill in with cable tools, cored McClosky satura-

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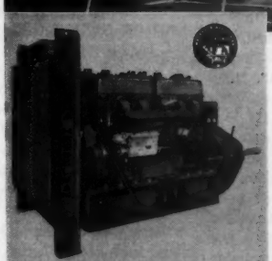

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tion at 1,896-1,904 feet. Carter Oil Co. No. 2 Francis Dempewolf, derrick up and ready to start drilling. W. E. Hupp and Carter Oil Co. No. 1 Gatewood & Mauzy joint lease, derrick up. W. E. Hupp and others No. 1 T. C. Jones, 14 acres, McClosky saturation 1,875-1,900 feet, estimated at 300 bbls. per day; No. 2 setting surface pipe. Carter Oil Co. No. 1 L. M. Mauzy, building rig. T. H. Polk and others No. 1 T. H. Polk, cored McClosky, cemented pipe and will drill in with cable rig to total depth 1,905 feet. A good well is expected. J. C. Miller, trustee, No. 1 O. W. Rash Heirs, 725-acre tract, set 90 feet of surface pipe.

Spottsville district: Magnolia Petroleum Co. No. 1 Sam L. Green, 90-acre tract, moved onto location. Niagara district: Mecca Oil Co. No. 4 J. W. Wilson, 786,000 feet of gas, 164 pounds rock pressure, gas sand 484-95 feet. Skidded rig 100 feet and drilling No. 5.

Hopkins County, 5 miles southeast of Madisonville: Hobbs, Campbell & Huntsaker No. 1 Cox Estate (Baker-Hickman Mineral Rights), drilling at 1,200 feet.

McLean County, Island district: South Penn Oil Co. No. 2 C. M. Markwell, spudding in.

Ohio County, Friendship Church district: Charles Marsh and others No. 4 John Bellamy, spudding in. Adaburg district: Nollem Oil & Gas Co. No. 7 Vincent Crowe, dry hole through McClosky lime. H. Ogle and others No. 4 Tom Helm, drilling at 300 feet. Dr. Hardie and others No. 3 Charles Roach, spudding in. Oaks district: William Smith and others No. 6 Charles Downes, dry hole through Jett sand, total depth 333 feet.

Webster County, Sebree district: J. R. Powell and others No. 3 Clarence Melton, drilling at 1,000 feet. I. B. Browning and others No. 6 J. R. Ramsey, deep test, drilling at 2,300 feet.

EASTERN KENTUCKY OPERATIONS

ASHLAND, Ky., July 4.—Four completions are included in this week's report of operations in the Eastern Kentucky field.

Price Fraley and others completed No. 2 Flahaven Land Co., on Big Sinking, in the Big Sinking district, Lee County, at a total depth of 727 feet, a 10-bbl. well. South Penn Oil Co. No. 107, on the same land, was finished at 1,080 feet, with a production of 5 bbls. daily. In the same district, McConn & Wissing were drilling at 1,460 feet in No. 1 J. M. Combs, on Little Sinking. In the Hell Creek district, Lee County, Amp Burnett was drilling at 900 feet in No. 5 Day Timber & Coal Co., on Walker Creek.

In Martin County, Kentucky-West Virginia Gas Co. completed No. 5242 C. W. Preece at 1,377 feet, a 6-bbl. well. The same firm was drilling at 1,115 feet in No. 19, also on the Preece land on Peg Fork of Coldwater Fork. J. T. Diedrich completed No. 6 Amy Paley, on Big Crooked at 1,453 feet, with a flow of 12 bbls. of oil daily. Virginian Gas & Oil Co. was drilling at 1,595 feet in No. 1 Cassidy heirs, on Big Crooked. The Kentucky-West Virginia Gas Co. is idle at No. 5243 C. W. Preece, on Coldwater Fork, and is grading location at No. 5244, and is down 20 feet, spudding at No. 5245 on Preece land.

In Floyd County, Kentucky-West Virginia Gas Co. has reached the 2,790-foot level in shale in No. 567 M. Slone and M. D. Slone, on Levisa Fork, and is down 1,382 feet in slate in No. 571 Noah Jarvis nearby. The same firm was at 1,115 feet, in sand, in No. 573 Jennie Caldwell, in the same locality. Inland Gas Corp. was drilling at 733 feet in No. 201 Layne heirs, on Toms Creek.

In Pike County, Inland Gas Corp. reached the 2,889-foot level in No. 199 Helen Leslie.

Oklahoma Fields

(Continued from Page 85)

Samuels, CSL SE NW section 17-18-12, Creek County, made a 275,000-foot gas well at 1,025-45 feet.

In the Southern Fields

Jones & Robberson No. 1-A Saddler, 510 feet S and 50 feet W of C section 30-2n-4w, Garvin County, an old well deepened from 580 feet, was dry and abandoned. It drilled into water at 950-58 feet but continued to 1,135 feet.

In Comanche County, V. H. Hester and others No. 9 School Land, NE NE NE, was dry and abandoned at 1,020 feet, in Granite Wash. Wilson & Hubble No. 1 Jack Allen, NE cor. section 28-2-10w, was dry and abandoned at 1,023 feet, in Granite Wash, topped at 926 feet.

In Stephens County, Charles W. Scott No. 1 Ida Belly, NE cor. NW SW NE section 9-3s-5w, which had been drilled to 1,689 feet, was plugged back to 903 feet. It pumped off in six hours, having produced only 4 bbls. of oil.

In Jefferson County, Long, Yingling & Louck No. 31 Seay, SW cor. NE section 3-7s-5w, in the Seay pool, was completed in sand at 1,102-09 feet. It first tested 40 bbls. of fluid, 90 per cent water, but later pumped 8 bbls. of oil and 30 bbls. of water in 24 hours. Same operators No. 2 Seay, SW cor. NW NE section 3-7s-5w, found only water at 1,306-08 feet, and was abandoned.

In Southwestern Oklahoma

In Kiowa County, Anderson & Prichard No. 1 Johnson, C NW NE SE section 10-7n-20w, Kiowa County wildcat, was junked at 1,215 feet after a hopeless fishing job. No showings were reported. Anderson & Prichard No. 1 Cribbs, SE SE NE section 28-7n-19w, another Kiowa wildcat, topped Granite at 1,660 feet and drilled to 1,825 feet and was abandoned. It topped Granite Wash at 1,465-75 feet and got a hole full of water.

In Beckham County, Mid-American Oil Co. No. 1-A Biscoe, a twin, SW SW SW section 28-8-22w, was dry and abandoned at 2,764 feet. This wildcat was started in February, 1937.

Osage and Pawnee Counties

Two dry holes constituted Osage County's crop of completions. R. Branstetter No. 1, 330 feet from N and 810 feet from W lines of SW quarter section 5-21-11, was abandoned at 2,362 feet and Rock & Latham No. 4, 860 feet from S and 170 feet from W lines of NW quarter section 2-28-10, was abandoned at 1,080 feet.

In Pawnee County, Veasey & Rempsch No. 1 Orme, NE SW SE section 21-21-7, was dry and abandoned temporarily at 1,710 feet. It had Layton sand at 1,650-1,700 feet and it showed 1½ bbls. of water per hour.

New Operations

First reports of new operations show 29 new starts in the past week.

Indian Territory Illuminating Oil Co. No. 216, 960 feet from south and 300 feet from east lines of SE quarter section 8-26-11, Osage County, is rigging up to drill deeper from 1,892 feet.

Price & Warner had machine rigged up for No. 4-A Warner, CWL E half NE section 21-14-14, Okmulgee County; Lincoln Oil & Gas Co. No. 18 Roberts, NE SW SW section 29-15-14, was drilling at 120 feet; Alex E. Karam No. 1-A Tiger, NE SW SE section 21-16-14, was drilling at 100 feet. E. R. Black and others No. 1, NE SW NE section 8-14-11, had tools in. Steinberger and others had machine in for No. 1-A, SE SE NE section 21-16-11. Jordan and others made location for No. 1-A Simms, CNL SE SE section 33-16-11. In Okfuskee County, Amerada Petroleum Corp. and others had cellar and pits dug for No. 1 Coused, NE NW SW section 33-10-10.

In Pawnee County, Sinclair Prairie Oil Co. No. 6 Coyne, SW cor. SE SE NE section 17-21-8, was deepening from 1,702 feet and had reached 1,712 feet.

In Creek County, Klingensmith Oil Co. had a machine rigged up for No. 1 Anthis, SE cor. NW section 36-18-10. Clint Williams Drilling Co. rigged up standard tools for No. 1 Croker, NE cor. NW SE section 27-17-9.

In Noble County, Texas Canadian Oil Corp. and others had rig up and were moving in tools to start No. 1 Shultz, NE NE NE section 29-23-1w, a wildcat on a seismographed structure.

In Seminole County, Troup, Moore and others were drilling at 1,303 feet in No. 1 Slaughter, SE NE NW section 27-6-5, West Konawa field. Southern Oil Co. spudded a wildcat, No. 1 Van Meter, SW SW NE section 7-7-6. Wood Oil Co. was building rig for No. 2 Cudjo, SE SE NE section 2-8-6, in the Bowlegs field. Magnolia Petroleum Co. made a location for No. 2 C. E. Davis, NE NW NE section 24-7-4, in the St. Louis pool, Pottawatomie County. Sunray Oil Co. had rig up for No. 6 Shields, NW NE SW section 33-5-8, Allen field, Pontotoc County. Sinclair Prairie Oil Co. had cellar dug for No. 3 Gordon A, NE SW NE section 21-5-5, Beebe field, Pontotoc County. Magnolia Petroleum Co. made a location for No. 3 Fleets & Osborne, SE SE NE section 26-5-7, Allen field, Pontotoc County. Wood Oil Co. was building rig for No. 1 Greenlee, NE NW NW section 34-6n-5e, West Konawa pool, Seminole County. Atlantic Refining Co. had rig up for No. 2 Bowlegs, SE NW NW section 22-6-6, Traugh pool, Seminole County. Simpson & Roodhouse made a location for No. 1-A Fleet, NW NW NW section 27-7-5, a wildcat, in Seminole County.

Arrow Drilling Co. No. 1 Banks, SW SE SE section 16-2-7, Fitts pool, Pontotoc County, old total depth 4,246 feet, was plugged back and tested without any commercial results. The casing was perforated at 4,139-55 feet and 20 bbls. of oil and 42 bbls. of water was swabbed. It was acidized with 1,000 gallons and a 100-bbl. oil load and pumped 20 bbls. of oil and 35 bbls. of water. It was then perforated at 3,210 feet and the hole filled 1,000 feet with water in 30 minutes and the well was abandoned.

In the southern districts, Cox & Hamon No. 2 Jackson, SE cor. NE SW section 15-4s-2w, Hewitt field, Carter County, old total depth 2,012 feet, was drilling at 2,115 feet. Darley Petroleum Co. had cellar and pits dug for No. 2 Loose, C NW SE SE section 27-6n-10w, in the Cement pool, Caddo County. J. C. Davis No. 3 Anderson, NE SW SW section 23-1s-10w, Walters pool, Cotton County, was drilling in lime at 1,617 feet. Long, Yingling & Laucks No. 3 Seay, SE NW NE section 3-7s-5w, Oscar or Seay pool, Jefferson County, was drilling at 810 feet.

California Fields

(Continued from Page 91)

flowing 285 bbls. of clean 19.1-gravity oil daily from 2,196 feet after the well had been carried down to 2,204 feet and then plugged back. In the Coffee Canyon section of the Round Mountain field, Dwight Vedder completed No. 6 Bell in section 12-28-28, pumping 312 bbls. of relatively clean 14.5-gravity oil per day from 1,906 feet after the hole had been finished with 85 feet of 6⅝-inch liner including 61 feet of perforated landed on bottom. In the Kern River Front, Helm and Smith have completed No. 4-A in section 34-28-28, pumping 10 bbls. of 14.3-gravity oil daily from 672 feet and while this initial production appears rather small it is considered commercially productive due to the shallow depth at which wells are completed. No. 4-A was finished with 486 feet of 8⅝-inch water string and 200 feet of 6⅝-inch liner including 160 feet of perforated landed on bottom. Location has already been staked for No. 5-A in the same section. In the Kettleman North Dome field, Standard Oil Co. has completed No. 58-33-J in section 33-21-17, flowing 814 bbls. of 35.1-gravity oil and 425,000 feet of gas per day from the Temblor at 8,310 feet. This well was finished on a compressor injecting 900,000 feet of natural gas daily and recovering an additional 425,000 feet of formation gas.

Coastal Area

Chanslor Canfield Midway Oil Co. completed another good well in the Rincon field of Ventura County where it has been drilling with favorable results for the past year when No. 21-B Hobson was brought in flowing 514 bbls. of very clean 28.9-gravity oil and 380,000 feet of natural gas daily from 4,533 feet. This new well was finished with 144 feet of 6⅝-inch liner including 78 feet of perforated landed on bottom. The crew from this well has been transferred to No. 7-C Hobson preparatory to an early spud. Two additional wells have been completed in the Santa Maria Valley field although neither showed large production. G. & B. Oil Co. No. 1 in section 26-10-34, was good for 260 bbls. of 16.1-gravity oil daily under a natural flow from 5,388 feet and Union Oil Co. No. 1 Nicolai in section 28-10-34, pumping 315 bbls. of 16.3-gravity oil daily from 5,195 feet. Inability to dispose of Santa Maria Valley crude oil has severely reduced drilling operations and a still further drop is anticipated.

Current completions in Torrance were Hansco Oil Co. No. 1 Lomita, finished flowing 540 bbls. of very clean 27.8-gravity oil and Lomita Oil Co. No. 1, flowing 685 bbls. per day from 4,960 feet. Hansco's new well was bottomed at 5,000 feet and finished with 131 feet of 4½-inch liner including 100 feet of perforated. Production was secured through a 16/64-inch bean and pressure gauges showed 100 pounds on the tubing and 575 pounds on the casing. Standard Oil Co. is making preparations to deepen No. 1-12 Marble and the Texas Co., which has already completed several good wells on the Wilson property, has staked location for No. 12 Wilson. Jones-Long Co. has made location for No. 1 Lyon and Ivar Larson has material on the ground for No. 1 Ramsey. Other wells just starting or having new derricks standing include two of California Pacific Oil Co.; Devils Den Oil Co.; Elexico Oil Corp. No. 2-K; Lakeside Oil Co. No. 3; Lomita Drilling Co. No. 2; C. L. McWherter No. 1; Packard Oil Co. No. 2 Lomita; Rico Oil & Gas Co. No. 1 Henderson; Silver Strand Oil Co. No. 1 Torrance and Woolner Oil Co. No. 4 Lomita.

Michigan Field Report

By
O. C. PRESSPRICH

Deep Test in Midland Area; Big Gasser in Clare County

SAGINAW, Mich., July 4.—Possibility of deep drilling in Jerome Township of Midland County to test for oil production loomed in the past week, together with discovery of a possible new gas field in Lincoln Township, Clare County, to attract attention of operators away from steadily mounting production in nearly all active Michigan oil fields.

Operators regarded as significant the wildcat test of Sun Oil Co. No. B-1 State-Jerome, SW SW NE section 9-15n-1w, which had favorable showings of gas and oil in the Detroit River series (Monroe) formation at a depth of 4,657 feet. Water coming in from higher levels prevented an accurate gauge. Further testing of the well will be made, Sun officials said, and the hole may be acidized. The test is the deepest drilled in Jerome Township, although deeper drilling has been recorded without success in Michigan. Considerable speculation has resulted over possibilities of commercial production from lower strata than those from which Michigan wells now are producing.

Gulf Refining Co. tapped what is believed to be the largest gasser in Michigan outside the Six Lakes field in Montcalm County when its No. 1 Ann Arbor Railroad, NW NW NW section 21, Lincoln Township, Clare County, gauged 21,000,000 feet. The test was projected as an oil well, but gas was tapped 5 feet in the Michigan stray sand at 1,555 feet. Gulf officials announced they would attempt to cement off the flow and continue the oil test. It is the third recent attempt where a contemplated oil well being drilled by Gulf has struck a prolific gas flow. The company drilled a 14,000,000-foot gasser in Grant Township, Clare County, and unsuccessful efforts to stem the flow caused its development as a gas well. An offset with a smaller output continued as an oil test without success.

Summer production continued active in all Michigan oil fields, although lacking in sensational developments. Proved areas continued to add to daily potentials, with 14 new oil wells increasing daily runs by an estimated 3,700 bbls. Six wildcats in outlying districts well removed from production centers were listed as failures.

Allegan Leads

Allegan County fields continued to hold the lead for both production honors and the largest number of producers. Four Allegan oil wells, one of which was good for 900 bbls. daily, combined with three dry holes to complete the Allegan summary of the week. Monterey and Salem townships contributed the four oil wells. Midland County's Edenville pool contributed two oil wells and prolific Buckeye in Gladwin a like number. Bentley, Isabella-Broomfield, Ogemaw-Horton and Ogemaw-West Branch contributed one producer each.

Edenville continued to add to its proved territory in the discovery sector with highly favorable producers, but boundary tests to prove the field's extent were lacking.

Allegan County—Monterey Township

Led by a 900-bbl. acidized producer, best for the week, Allegan oil fields retained production honors and held out further promise for development in Michigan's fastest growing pool. Hood Oil & Gas Co. No. 3 Wright, SW NW SW section 9-3n-13w, ran a gauge of 900 bbls. daily after acid to become one of the best wells in the pool. Sim B. Hood's No. 1 Miller, NW NE NW section 16, was acidized to 200 bbls. daily for the second producer of the week for Monterey. There was one dry hole, Swanson Oil Co. No. 1 Granger, SE SW NE section 17.

Salem Township

Continuing active and successful development in Salem Township, two producers were added to the Salem field this past week. Lentz & Miller No. 4 Sebright, NE NW SW section 16-4n-13w, was a 100-bbl. producer after acid, and H. Leland's No. 1 Hardy, S half SE section 21, gauged 100 bbls. daily acidized production. Drilling was active in several sections of Salem.

Dorr Township

One oil well and a dry hole summarized drilling activities in Dorr Township, where seven tests are in various stages of completion. Eureka Development Co. No. 3 Widenfeller, SW NW SW section 29-4n-12w, developed into a 300-bbl. producer after acid, while Columbia Oil & Gas Co. No. 3 Richter, NE NE SE section 30, was dry and slated for abandonment.

In Wayland Township failure marked an attempt at Wayland Syndicate No. 2 Carpenter, SE SE NE section 7-3n-11w, to prove up commercial production in wildcat territory. The test is 4 miles removed from the nearest production. It will be abandoned.

Midland County—Edenville Township

Heralded as the largest producer in the Edenville field, Chapman Oil Co. No. 4 State, NE SW NE section 27-16n-1w, west offset to the discovery well, came into production last week with an initial flow of 825 bbls. in 24 hours. The test was reported later to be flowing at better than 600 bbls. in the natural state, to top Edenville producers of the week. No plans have been made to acidize the well, but a decline in production will result in treatment. The latest Chapman test is surrounded by producers, but the size of the natural flow surprised and exceeded expectations. Sun Oil Co. developed the second favorable producer of the week in Edenville with its No. B-7 State, SE SE NE section 27, producing 400 bbls. daily after acid. In the natural state the test flowed 288 bbls. in 24 hours. Sun Oil Co. also planned to bring in an edge test in section 26 at its No. C-1 State-Edenville, in the southeastern part of the field. The test is below 3,000 feet and due to tap the pay zone within the week. The C-1 State is the only edge test due in production soon in Edenville.

Jerome Township

The Jerome sector, lying close to productive Edenville Township, holds the latest hopes of Michigan oil operators as a field for deep testing, due to developments of the past week at Sun Oil Co. No. 1 State-Jerome, SW SW NE section 9-15n-1w. Shows of oil and gas were encountered in the Monroe formation at a depth of 4,657 feet, causing much speculation as to possibilities of commercial production in deep strata. Water was reported cutting into the oil show considerably, but was said to come from higher levels, and was to be cased off. Testing will continue before decision is made to acidize. Two other deep tests in Michigan, which went to 6,600 feet and 5,000 feet, failed to produce.

Gladwin County

Three producers were added to Buckeye, Gladwin County, during the week, all in comparatively undeveloped sections of the field. T. F. Caldwell continued to develop the western midway sector with his No. 2 Hostetler, NE SE NE section 27-18-1w, which gauged 250 bbls. daily after acid. Considerable activity is apparent on the western edge of the south (Oard) pool, due to recent extension tests in the locality. Sun Oil Co. continued to add to its string of favorable producers in the north (Wicklund) pool with its No. 8 Strohkirch, NW SE NE section 9—another western extension in the north pool—coming into acidized production at 125 bbls. daily from a natural production of 50 bbls. Sun No. B-2 Strohkirch, SE NW NE section 9, which passed an oil show, is scheduled to be plugged back and treated. Rex Oil & Gas Co. No. 3 McKimmy, NW NE NE section 13, a southeastern extension of the north (Wicklund) pool, brought in a 50-bbl. natural producer, which probably will be acid treated.

Bentley Township added one producer during the week at Gulf Refining Co. No. 2 State, NE SE SW section 20-17n-2e, a 60-bbl. acidized well.

In Grim Township, W. E. Ross Trust No. 1 Kinyon, NW NW NE section 18-18n-2e, met failure in another attempt to prove commercial production in Grim. The test will be abandoned.

In Tobacco Township, Dougherty & Markey, Inc., No. 1 Lalone Brothers, SW SE SE section 32-17n-1w, failed to make a commercial oil show and will be abandoned.

Isabella County

In Broomfield Township a favorable oil show was acidized into a 550-bbl. daily producer this week at Pure Oil Co. No. 13 Wille, N half N half NW section 4. The test is the only active one in Broomfield.

In Wise Township, Socony-Vacuum Oil Co. No. 1 Campbell, SW SW NE section 11-16n-3w, was dry and will be abandoned.

Ogemaw County

In Horton Township, Ogemaw County, Weber Oil Co. No. 1 Gray, NE NE NW section 2-21n-2e, developed as a favorable commercial producer after acid treatment, with a gauge of 40 bbls. daily.

In West Branch Township, Fortney Oil Co. No. 1 County Farm, NW SW NW section 20-22n-2e, was acidized to a production of 75 bbls. daily.

Clare County

In Freeman Township, Clare County, possibility of a Traverse formation producer, indicated a week ago at S. J. Higelmire Trust No. 1 Van Horn, NE SW NW section 3-18n-6w, was dimmed the past week, when deepening and acid treatment produced no results, and drilling continued toward the Dundee limestone. The wildcat was intended originally as a Dundee test, but a show of about two bailers of oil in the Traverse led to the belief that commercial production could be had there. The test was shut down for the week-end at 3,600 feet, still in the Traverse. A small amount of water was cutting into the small oil show.

Montcalm County

In Home Township, Montcalm County, confirmation of a new gas field was seen last week at Leslie T. Barber No. 1 Nielsen, C SW section 14-12n-6w, which gauged a potential of 1,800,000 feet. The new gasser is half a mile northeast of Socony-Vacuum Oil Co. Dundee oil test in section 22, which resulted in an oil failure, but opened the gas play for the new field. The Socony well gauged a 5,000,000-foot gas flow when passing through the Michigan stray.

Eastern Fields

(Continued from Page 92)

ging up the Floto Johnson test and started drilling the Lillie Dawson and others test.

Mullins Gas Co. is down 296 feet in the J. C. Fisher and others test; at 130 feet in the W. H. O'Dell test, and has part material on the ground for the Earl K. Johnson test. Joe Rubin is drilling out cement on the Carney heirs farm with the casing set in the lime and a total depth of 4,815 feet. Liosag Fuel Co. is down 4,901 feet in the H. C. Matthews test; Phillip K. Harness, down 4,906 feet in the Lena K. Snodgrass test; Spartan Gas Co., 1,764 feet in the R. B. and Fred Baldwin test; Poca Fork Oil & Gas Co., 1,550 feet in the Levi Combs test. Geary Morley Gas Co. has reached 1,707 feet in the Diana J. Milam heirs test.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, July 2.—With recent completions, including the large Vulcan-Brown Petroleums No. 1 in the West Central area, Turner Valley rated potential production is between 45,000 and 46,000 bbls. a day, or a possible 16,500,000 bbls. a year. On this basis the field would be the largest petroleum producing area in the British Empire, the estimated potential exceeding the Trinidad production, which last year approximated 13,000,000 bbs. With crude petroleum consumption in Canada approximately 105,000 bbls. a day, a point is being reached where, if transportation problems could be solved, Canada would be able to production close to 50 per cent of its petroleum requirements. Wells now drilling, a number of which are nearing completion, are expected to increase very materially the potential of the field.

In West Central Turner Valley, Vulcan-Brown Petroleums No. 1, LSD 10, section 5-19-2w5, is definitely the largest producer yet completed on the Turner Valley west flank. On an initial eight-hour test it flowed at the rate of 6,796 bbls. a day with actual production for 24 hours of 5,720 bbls. Official three-day test for a temporary potential was started, but in two and one-half days the well, operated under back pressure to cut down the flow, swamped all the available storage and pipe-line facilities, and had to be shut in. Average daily flow was estimated at 4,528 bbls. and a temporary potential set at 3,018 bbls. It will be operated for 26 days on a quota of 1,116 bbls, when 24-hour open flow will be taken and a permanent potential set. Owing to the large accumulation of oil from the initial tests, production may be shut in temporarily.

In section 29-18-2w5, Globe Royalties No. 1, LSD 7, finished 448 feet in the Madison at 7,403 feet depth, is making around 300 bbls. a day, but is still blowing about 100 bbls. a day of water. The first acid treatment was unsuccessful owing to large quantities of drilling fluid still in the hole. A test taken after building up pressure indicated a possible 2,000 bbls. a day, but this dropped. Following tubing adjustments and cleaning a second acid treatment will be tried.

In section 32-18-2w5, Royalite Oil Co. No. 30, LSD 11, finished at 7,690 feet with temporary potential of 501 bbls. a day, is making government test for permanent potential, after acidizing.

In Southwest Turner Valley, United Brown Petroleums No. 5, LSD 1, section 20-18-2w5, finished at 7,303 feet after getting the Madison at 6,839 feet, has been given temporary potential of 789 bbls. a day.

In section 17-18-2w5, Sundance Royalties No. 1, LSD 9, finished in the Madison at 7,410 feet, showed 3,858 bbls. on 24-hour open flow test. Permanent potential was set at 2,572 bbls.

In section 16-18-2w5, Frontier Royalties No. 1, LSD 11, finished at 6,915 feet, was given temporary potential of 2,462 bbls. before acidizing. Flush production after acidizing started at 200 bbls. an hour. Official test is being made.

Tests in the Lime

In section 17-18-2w5, Coronation Royalties No. 1, LSD 10, offsetting Frontier No. 1 producer to the east, is below 7,425 feet after getting the Madison limestone at 7,102 feet, and will finish in a few days.

In section 5-19-2w5, West Central Turner Valley, Mercury Royalties No. 1, LSD 8, got the Madison limestone at 6,114 feet and is preparing to resume after cementing 6⅝-inch casing in the top of the lime. It got the limestone 874 feet higher than Vulcan-Brown No. 1, about one-quarter mile to the northwest. Results of this test will give further information as to the possibilities of the West Central area.

West Side Drilling

In section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 33, LSD 2, a half mile south of Vulcan-Brown No. 1 producer, is below 4,564 feet.

In section 6-19-2w5, East Crest Oil Co. No. 4, LSD 8, is deepening after setting 13-inch casing at 2,200 feet. It is planned to drill 12-inch hole to 3,000 feet and cement 10-inch casing, before changing to rotary outfit.

In section 32-18-2w5, permits have been secured for Freehold Royalties No. 1, N half LSD 14; Freehold-British Petroleums No. 1, N LSD's 13-14; and Freehold-Hargal Royalties No. 1, N half LSD 13. The tests, sponsored by Freehold Oil Corp., will start this month, with Coast Drilling Co. handling the drilling. Vantage Oils No. 1, S half LSD 12, is at 96 feet, waiting for 18⅝-inch casing. Davies Petroleums No. 4, LSD 10, is in the Benton formation below 2,660 feet. It got the Commoll fault at 1,230 feet and the Belly River-Benton contact at 2,360 feet. West Turner Petroleums No. 2, LSD 7, is below 6,640 feet. West Turner No. 3, LSD 6, is in the Upper Benton formation below 2,904 feet. British Colonial Oils No. 1, LSD 5, is standing at 1,506 feet.

In section 29-18-2w5, Commoll No. 2, LSD 10, is in the Lower Benton formation below 5,610 feet. Command Oils No. 1, LSD 14, has resumed and is below 782 feet. P. & H. Development Co. No. 1 Alco, LSD 13, is below 1,260 feet. Royalite Oil Co. No. 31, LSD 6, is below 7,014 feet and getting close to the Madison limestone.

In section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, is in the Lower Benton formation below 6,134 feet. Producers Crude Corp. No. 1, LSD 11, is shut down at 3,028 feet, waiting for rotary outfit. Sunset Oils No. 2, LSD 7, is below 5,444 feet. York Oils No. 1, LSD 2, is below 6,147 feet.

In section 17-18-2w5, Extension Royalties No. 1, LSD 14, is shut down at 884 feet, waiting for rotary. Royalite Oil Co. No. 32, LSD 8, is below 6,341 feet.

In section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, is below 3,003 feet. Richwell Oil Co. No. 1, LSD 5, has been taken over by Neil McQueen and associates of Vancouver, British Columbia. The well, in the Belly River formation at 2,080 feet, has been deepened and 10-inch casing set, and will change to rotary, Newell & Chandler handling the contract. Location is southwest of Frontier No. 1 producer. Royal Canadian Oil Co. No. 2, LSD 4, has resumed from 3,000 feet after changing to rotary outfit. Okalta Oil Co. No. 7, LSD 3, is preparing to resume after cementing 10-inch casing at 3,000 feet.

In section 33-17-2w5, Davies Petroleums No. 3, LSD 7, is standing with 10¾-inch casing cemented at 3,245 feet, waiting for rotary outfit from Davies No. 4, Cable tools from No. 3 have been moved to Davies No. 1 producer, LSD 2, section 29-18-2w5, to clean out the limestone which caved when it was being brought into production.

Far South Test

In section 33-16-2w5, Anglo-Canadian Oil Co. No. 2, LSD 2, has spudded, the new farthest south location on the Turner Valley structure, being 8 miles south of National Petroleum Corp. No. 2, nearest producer, and 5 miles south of Davies Petroleums No. 3, nearest active well.

Okalta Deep Test

In section 30-18-2w5, Okalta Oil Co. No. 6, LSD 3, is in the Lower Blairmore below 8,660 feet with considerable crude showing in the drilling fluid. It entered the Blairmore at 8,230 feet and is expected to get the Madison limestone at 9,500 feet. The log indicates the well is drilling in the fault block in the beds dipping westerly from the crude producing area, and it is expected to get the producing horizon of the limestone around 10,000 feet. Before completion it will exceed the depth record established for Canada last year by Arca Development Corp. No. 1 on the Cayley structure near High River, which finished in the Madison limestone at 8,988 feet.

In section 31-18-2w5, Anglo-Canadian Oil Co. No. 1, LSD 16, is below 2,017 feet.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is below 6,753 feet and getting close to the Blairmore formation. Home Oil Co. No. 2 Millarville, LSD 6, section 33-20-3w5, is below 3,505 feet.

New Tests Planned

In section 17-18-2w5, Anglo-Canadian Oil Co. No. 3, LSD 10, is working on cellar. Location is immediately west of Sundance Royalties No. 1 large producer.

Royalite Oil Co. is reported arranging to drill No. 34 in section 5-19-2w5, offsetting Vulcan-Brown Petroleums No. 1 producer. The Royalite Oil Co. may also deepen Mayland Oil Co. No. 3, LSD 2, section 17-19-2w5, finished in 1930 as a small naphtha producer. Mayland No. 3 was drilled only 357 feet into the lime while subsequent drilling has shown the main porous horizon more than 400 feet in. Location is almost 1¾ miles due north of the Vulcan-Brown producer.

Montreal interests will drill on acreage of Southfield Syndicate in section 13-19-3w5. This will test an area about 2 miles northwest of the Vulcan-Brown producer.

Davies Petroleums, Ltd., has completed purchase of LSD's 1 and 8, section 29-17-2w5, about a mile southwest of Davies No. 3 well.

East Side Drilling

On the New Valley structure northeast of Turner Valley, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, is running casing to bottom at 8,462 feet and preparing to swab crude standing some 2,000 feet in the hole. Analysis of samples shows a 38-gravity crude with 0.30 sulfur content, yielding: gasoline and naphtha, 26.4; kerosene-distillate, 12.5; gas-oil, 18.8; lubricating distillate, 19.7. The present flow is distinct from previous samples and is believed to come from the bottom of the hole.

On the De Winton structure, Marquis Oils No. 1 Anglesey-Lakeview, LSD 1, section 22-21-1w5, is cleaning below 2,500 feet, with some gas indications. The original hole bottoms at 4,500 feet with casing at 2,713 feet.

Tests in the Foothills

On the Pouce Coupe structure in the northern foothills west of Peace River, Guardian Oil Co. No. 1, section 7-80-12w6, is below 220 feet.

On the Brazeau structure west of Edmonton, Home Oil Co. No. 1 Brazeau, LSD 16, section 7-43-17w5, is standing at 4,520 feet, waiting for a new line.

In the Ram River area, 25 miles south of the C.N.R. Red Deer-Nordegg branch, Ram River Oils is preparing for active development. Russell V. Johnson with a pack train is leaving Phoenix for the unsurveyed area to locate No. 1 test and survey a road from Phoenix. Drilling will probably start this month.

On the Kootenay dome west of Calgary, Roxana Petroleums No. 1, section 8-24-7w5, has resumed from 3,804 feet after a fishing job.

On the Highwood-Sinclair structure southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is in hard formation below 5,948 feet, some 588 feet in the Madison limestone There is some gas but the test is considerably below the depth in the lime at which the main producing horizon is usually encountered in Turner Valley.

British Dominion Oil & Development Corp. of Calgary has taken over leases covering LSD 12 and SW quarter LSD 13, section 4-22-6w5, and NE quarter LSD 8 and E half NW LSD 8, section 5-22-6w5. Acreage is subject only to government royalty. Acreage is in the vicinity of the Moose dome, on which Moore Oils No. 2 last year encountered light crude at 1,553 feet depth.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum Corp. No. 4, LSD 15, section 25-9-17w4, is below 2,280 feet with the potential oil horizon of the Clancey sand expected around 3,250 feet. Plains No. 5, LSD 2, section 36-9-17w4, is below 735 feet. North Taber Royalties No. 1, LSD 7, section 10-11-15w4, is ready to spud.

In the Magrath area, Lyons-McIntyre No. 1, LSD 14, section 19-3-21w4, is standing at 3,630 feet.

In the Barnwell field, Border Petroleums No. 1, LSD 5, section 32-9-17w4, is

(Continued on Page 106)

Hoard Exploration Co.
Seismograph Surveys
618 Esperson Bldg.
Houston - - Texas

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	4,620	sd. sh. drlg.
Montgomery, H. S., No. 1 Wagner, Capitan, S. Barb.	tideland	1,302	well P.B.
South Crude Oil, No. 2-191, Coal Oil Point, S. Barb.	tideland	5,510	redrlg. 3,896
Hancock-Bush, No. 4 Hopkins, Santa Maria, S. Barb.	30-10-33	3,850	sd. sh. drlg.
Moore, E. H., No. 10 Sugar, Santa Maria, Santa Barb.	24-10-34	4,361	sd. sh. drlg.
G. & B. Oil, No. 1 B. & G., Santa Maria, Santa Barb.	26-10-34	5,390	flow 340 b.d.
Selegna Oil, No. 1 S. M., Santa Maria, Santa Barbara	26-10-34	5,257	flow 220 b.d.
Union Oil, No. 2 Wheat, Santa Maria, Santa Barbara	22-10-34	3,945	pump water
Union Oil, No. 3 Vicente, Santa Maria, Santa Barbara	21-10-34	4,982	sd. sh. drlg.
Union Oil, No. 5 Vicente, Santa Maria, Santa Barbara	25-10-34	1,435	sd. sh. drlg.
Union Oil, No. 1-Nicolai, Santa Maria, Santa Barbara	28-10-34	5,195	pump 250 b.d.
Sunshine Oil, No. 1 Girard, Santa Maria, Santa Barb.	27-10-34	2,171	sd. sh. drlg.
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	5,529	redrlg. 5,405
O'Donnell, J. E., No. 1 Helen, Lompoc, Santa Barbara	8- 7-33	3,897	hd. sh. drlg.
Douglas Oil, No. 1, Los Alamos, Santa Barbara	8- 8-33	5,930	sd. sh. drlg.
Barnsdall Oil, No. 3 Tognazzini, Gato Ridge, S. Barb.	9- 8-32	2,612	O.S. drlg.
United West. Oil, No. 1, Los Olivos, Santa Barbara	16- 7-30	3,270	idle
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,691	hd. sh. drlg.
Holly Dev., No. 1 Macrate, Ojai, Ventura	27- 4-23	587	sd. sh. drlg.
St. Louis Oil, No. 4 Pirie, Ojai, Ventura	18- 4-22	1,744	pump 15 b.d.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	5,770	gr. sd. drlg.*
Merchants Pet., No. 1 Sespe, Ventura	1- 4-20	660	sd. sh. drlg.
Stalling & Senter, No. 1, Timber Canyon, Ventura	24- 4-21	870	sd. sh. drlg.
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	1,625	sd. sh. drlg.
Darby Oil, No. 1 Cohn, Moore Park, Ventura	7- 2-19	2,540	sd. sh. drlg.
C. C. M. Oil, No. 7 Oakgrove, Padre Canyon, Ventura	23- 3-24	1,981	sd. sh. drlg.
C. C. M. Oil, No. 21 Hobson, Rincon, Ventura	8- 3-24	4,533	flow 520 b.d.
Richfield Oil, No. 8-F Hobson, Rincon, Ventura	8- 3-24	2,836	redrlg. 2,790
Tide Water A. O., No. 19 V.L.W., Ventura Ave., Vent.	26- 3-23	9,790	hd. sh. drlg.
Tide Water A. O., No. 39 V.L.W., Ventura Ave, Vent.	24- 3-23	2,050	sd. sh. drlg.
Tide Water A. O., No. 75 Lloyd, Ventura Ave., Vent.	26- 3-23	5,782	idle
Tide Water A. O., No. 111 Lloyd, Ventura Ave., Vent.	27- 3-23	8,850	hd. sd. drlg.
Tide Water A. O., No. 127 Lloyd, Ventura Ave., Vent.	27- 3-23	5,635	recmtd. 5,630
Tide Water A. O., No. 7 Hartman, Ventura Ave., Vent.	22- 3-23	5,484	sd. sh. drlg.
Tide Water A. O., No. 11 McGonigle, Vent. Ave., Vent.	23- 3-23	6,761	hd. sd. drlg.
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	5,990	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	7,798	cmtd. 7,710
Shell Oil, No. 37 Gosnell, Ventura Ave., Ventura	28- 3-23	8,618	P.B. 8,470
General Pet., No. 18 Barnard, Ventura Ave., Ventura	21- 3-23	6,651	sd. sh. drlg.
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	8,297	redrlg. 7,480
Goodrum, George, No. 1 Baron, Devils Den, Kern	24-25-18	1,190	will deepen
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	530	O.S. drlg.
Franco-Western Oil, No. 15, McKittrick, Kern	8-30-22	2,196	flow 270 b.d.
Leyse & Sonne, No. 1 Pasadena, McKittrick, Kern	28-30-22	3,064	sd. sh. drlg.
Chico-Martinez Oil, No. 1 Holly, South Belridge, Kern	1-29-30	1,020	pump 30 b.d.
Argo Pet., No. 1 Farnsworth, Lost Hills, Kern	11-26-20	1,338	O.S. drlg.
Randan Pet., No. 1 Theta, Lost Hills, Kern	3-26-20	1,625	cmtd. 1,535
Belridge Oil, No. 27-5 North Belridge, Kern	27-27-20	8,030	br. sh. drlg.
Belridge Oil, No. 35-26, North Belridge, Kern	35-27-20	8,671	flow 390 b.d.
Tide Water A. O., No. 3-21, North Belridge, Kern	21-27-20	8,478	flow 1,305 b.d.
Richfield Oil, No. 2 Belridge, North Belridge, Kern	22-27-20	7,080	br. sh. drlg.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	7,970	gr. sd. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	1,400	cleaning out
Pan-May Oil, No. 1 Coffee, Round Mountain, Kern	31-27-29	1,085	dry; abd.
Vedder, D., No. 6 Bell, Round Mountain, Kern	12-28-28	1,906	pump 310 b.d.
Shell Oil, No. 20 Caldwell, Round Mountain, Kern	7-28-29	2,006	dry; abd.
Shell Oil, No. 5-2 Olcese, Round Mountain, Kern	22-28-29	1,581	sd. sh. drlg.
Honolulu Oil, No. 46, Round Mountain, Kern	20-28-29	1,973	O.S. drlg.
McDonald & Dearin, No. 4, Kern Front, Kern	11-28-27	1,973	rig to pump
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,302	pump water
Oils, Inc., No. 4 Seven Spot, Kern River, Kern	13-28-27	1,255	O.S. drlg.
Fuhrman, Alfred, No. 25, Kern River, Kern	21-28-28	710	idle
Helm & Smith, No. 4-A Kernco, Kern River, Kern Co.	34-28-28	672	pump 10 b.d.
Hast Oil, No. 3 Kern, Kern River, Kern	34-28-28	390	O.S. drlg.
Deene, G. W., No. 1 Poso, Mount Poso, Kern	26-26-28	1,177	dry; abd.
Shell Oil, No. 7 Mathews, Mount Poso, Kern	4-27-28	1,650	sd. sh. drlg.
Western Gulf Oil, No. 4 Sawyer, Fruitvale, Kern	27-29-27	3,474	P.B. 3,430
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	5,196	sd. sh. drlg.
Mesa Pet. Co., No. 1 Dixon, Fruitvale, Kern	23-29-27	3,115	O.S. drlg.
Hogan Pet., No. 11 Porter, Mountain View, Kern	29-30-29	5,079	sd. sh. drlg.
Stevens, R. W., No. 1, Caliente Creek, Kern	22-30-30	680	sd. sh. drlg.
Petrex, Inc., No. 1 Edison, Arvin, Kern	32-31-30	5,190	sd. sh. drlg.
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	7,394	sd. sh. drlg.
Continental Oil, No. 1 Seaboard, KCL, Wasco, Kern	26-27-24	11,896	sd. sh. drlg.
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-27-24	7,891	cmtd. 7,507
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	4,060	sd. sh. drlg.
Superior Oil, No. 4 Wagner, Rio Bravo, Kern	35-28-25	11,554	O.S. drlg.
Superior Oil, No. 2 Geissinger, Bravo, Kern	35-28-25	11,360	sd. sh. drlg.
Superior Oil, No. 3 Geissinger, Bravo, Kern	35-28-25	8,377	sd. sh. drlg.
Superior Oil, No. 1 Helbling, Rio Bravo, Kern	1-29-25	10,894	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	11,204	redrlg. 6,973
Union Oil, No. 3-34 KCL, Rio Bravo, Kern	34-28-25	11,206	sd. sh. drlg.
Union Oil, No. 4-34 KCL, Rio Bravo, Kern	34-28-25	7,283	sd. sh. drlg.
Getty Oil, No. 2 Ramsey, Rio Bravo, Kern	35-28-25	8,990	sd. sh. drlg.
General Pet. Corp., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	10,192	redrlg. 9,650
General Pet. Corp., No. 4 Wagoner, Rio Bravo, Kern	35-28-25	2,196	sd. sh. drlg.
Standard Oil, No. 18-1 KCL, Una, Kern	29-28-26	9,351	sd. sh. drlg.
Shell Oil, No. 83-35 KCL, McFarland, Kern	35-26-25	8,660	sd. sh. drlg.
White, C. C., No. 1 Armstrong, McFarland, Kern	9-26-26	2,396	sd. sh. drlg.
Tide Water A. O., Well No. 1, Pond, Kern	17-26-25	6,494	sd. sh. drlg.
Dilmar Oil, No. 1 Quinn, Jasmin, Kern	15-25-27	2,875	recmtd. 2,829
Standard Oil, No. 11-15 KCL, Greeley, Kern	18-29-26	7,671	sd. sh. drlg.
Standard Oil, No. 12-5 KCL, Greeley, Kern	7-29-26	5,460	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	8,174	deepening
Continental Oil, No. 1-E KCL, Stevens, Kern	17-30-26	8,492	sd. sh. drlg.
Standard Oil, No. 15-2 KCL, Canfield Ranch, Kern	27-30-26	7,970	sd. sh. drlg.
Shell Oil, No. 38-29-A, Ten Section, Kern	29-30-26	8,220	flow 350 b.d.
Shell Oil, No. 56-30-A KCL, Ten Section, Kern	30-30-26	6,973	sd. sh. drlg.
Shell Oil, No. 32-32-B KCL, Ten Section, Kern	32-30-26	7,790	sd. sh. drlg.
Shell Oil, No. 58-20-B KCL, Ten Section, Kern	20-30-26	8,212	sd. sh. drlg.
Shell Oil, No. 32-13-A KCL, Canal, Kern	13-30-25	8,285	flow 1,483 b.d.
Shell Oil, No. 52-14-A KCL, Canal, Kern	14-30-25	2,984	sd. sh. drlg.
Ohio Oil, No. 7-E KCL, Canal, Kern	14-30-25	7,472	sd. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	11,186	reaming
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	8,597	hd. sh. drlg.
Midway Peerless Oil, No. 16, Midway-Sunset. Kern	15-31-22	875	O.S. drlg.
Mascot Oil, No. 3 Midway, Midway-Sunset, Kern	36-32-23	1,404	cleaning out
Surprise Oil, No. 3, Midway-Sunset, Kern	36-32-23	1,036	O.S. drlg.
National Oil, No. 18, Midway-Sunset, Kern	35-32-23	1,420	sd. sh. drlg.
Petrol Corp., No. 33-5 Reserve, Tejon Ranch, Kern	33-11-19	4,585	O.S. drlg.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	9,824	fish D.P.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	4,299	sd. sh. drlg.
Pure Oil, No. 1 SPL, Cantua, Fresno	31-18-17	10,862	redrlg. 10,370
Magnet Oil, No. 2 Fearon, Fresno	18-20-15	2,160	sd. sh. drlg.
Pet. Sec., No. 2 Gatchell, Guijarral Hills, Fresno	18-20-16	6,880	O.S. drlg.
Jacalitos Oil, No. 1, Guijarral Hills, Fresno	14-21-15	5,865	cleaning out
Dauphin Dev., No. 1 Boone, Alcalde, Fresno	30-21-14	3,778	P.B. 2,330
K.N.D.A., No. 67-20-J Kettleman North, Fresno	20-21-17	11,041	reaming
K.N.D.A., No. 27-8-Q Kettleman North, Kings	6-22-18	2,088	sd. sh. drlg.
K.N.D.A., No. 38-8-Q Kettleman North, Kings	8-22-18	8,761	cleaning out
K.N.D.A., No. 27-16-Q Kettleman North, Kings	16-22-18	7,943	sd. sh. drlg.
K.N.D.A., No. 58-16-Q Kettleman North, Kings	16-22-18	8,100	sd. sh. drlg.
K.N.D.A., No. 47-18-Q Kettleman North, Kings	18-22-18	8,004	cleaning out
K.N.D.A., No. 43-20-Q Kettleman North, Kings	20-22-18	8,115	hd. sh. drlg.
K.N.D.A., No. 27-22-Q Kettleman North, Kings	22-22-18	6,673	sd. sh. drlg.
Standard Oil, No. 46-13-H Kettleman North, Fresno	13-21-16	10,836	fishing
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	8,310	flow 810 b.d.
Standard Oil, No. 78-1-P Kettleman North, Kings	1-22-17	7,832	gr. sd. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	7,248	redrlg. 6,270
Standard Oil, No. 74-7-Q Kettleman North, Kings	7-22-18	7,352	P.B. 7,195
Standard Oil, No. 61-21-Q Kettleman North, Kings	21-22-18	5,382	sd. sh. drlg.
Dudley Ridge Oil, No. 2 Josephine, Cloud, Kings	24-23-20	6,510	idle
Texas Co., No. 1 Lewis, King City, Monterey	13- 9- 5	1,872	sd. sh. drlg.
Cal. Pet. Prod. Co., No. 1 Elkhorn, San Luis Obispo	6-10-25	1,940	sd. sh. drlg.
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo	30-12-33	3,897	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Wilshire Oil, No. 1 Cowell, Half Moon Bay, S. Mateo	20- 6- 5	2,525	idle
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20- 2	5,412	sd. sh. drlg.
Richfield Oil, No. 1 Potrero Hills, Solano	10- 4- 1	3,310	reaming
Amerada Pet., No. 1 California Lands, Colusa, Colusa	34-16- 1	3,371	sd. sh. drlg.
Texas Co., No. 1 Midland, Rio Vista, Sacramento	4- 3- 3	4,009	cmtd. 3,745

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Apex Pet., No. 3 Elsie, El Segundo, Los Angeles	12- 3-15	7,076	sd. sh. drlg.
Burnoel Pet., No. 1 Elsie, El Segundo, Los Angeles	12- 3-15	6,275	sd. sh. drlg.
Sovereign Oil, No. 2, El Segundo, Los Angeles	12- 3-15	7,326	O.S. drlg.
Treasure Oil, No. 3, Playa Del Rey, Los Angeles	21- 2-15	6,510	cleaning out
Rolling Hills Oil, No. 1 Weston, Palos Verdes, L. A.	27- 4-14	4,215	cleaning out
Gypsy Oil, No. 16 Getty, Torrance, Los Angeles	14- 4-14	4,897	sd. sh. drlg.
Andrews & Mitchell, No. 11 Kirk, Torrance, L. A.	14- 4-14	3,778	cleaning out
Allison & Oglesby, No. 1, Torrance, Los Angeles	14- 4-14	3,788	cleaning out
Consolidated Pet., No. 2, Torrance, Los Angeles	23- 4-14	2,835	sd. sh. drlg.
Ind. Drlg., No. 1 Mitchell, Torrance, Los Angeles	15- 4-14	4,810	sd. sh. drlg.
Kovell Oil, No. 1 Lomita, Torrance, Los Angeles	22- 4-14	3,760	sd. sh. drlg.
McCowan, C. T., No. 1-A Lindis, Torrance, L. Angeles	23- 4-14	2,396	sd. sh. drlg.
Morton & Elder, No. 1 Mitchell, Torrance, L. A.	23- 4-14	3,275	sd. sh. drlg.
McDonald & Burns, No. 2 Moore, Torrance, L. A.	23- 4-14	4,792	sd. sh. drlg.
McDonald & Burns, No. 7 Moore, Torrance, L. A.	23- 4-14	4,881	sd. sh. drlg.
McCaslin, W. E., No. 2, Torrance, Los Angeles	14- 4-14	2,167	sd. sh. drlg.
Lomita Drlg., No. 1 Stevenson, Torrance, L. A.	23- 4-14	4,960	O.S. drlg.
Calmont Oil, No. 1 Talbert, Torrance, Los Angeles	23- 4-14	4,751	sd. sh. drlg.
M. P. S. Oil, No. 1 Julian, Torrance, Los Angeles	14- 4-14	3,801	rigged up
Camp, C. W., No. 13, Torrance, Los Angeles	23- 4-14	4,930	sd. sh. drlg.
Doyle Pet., No. 3-A Getty, Torrance, Los Angeles	14- 4-14	5,634	P.B. 5,060
Charleston Oil, No. 3 Marcoux, Torrance, L. A.	14- 4-14	4,915	sd. sh. drlg.
Hampshire Oil, No. 1 Torrance, Los Angeles	23- 4-14	3,364	sd. sh. drlg.
Hughes, W., No. 3, Torrance, Los Angeles	14- 4-14	3,750	idle
Hujo Oil, No. 1, Torrance, Los Angeles	14- 4-14	2,996	sd. sh. drlg.
Krause & Baker, No. 2 Gladys, Torrance, Los Angeles	14- 4-14	3,795	rigged up
Peters Royalty, No. 2, Torrance, Los Angeles	14- 4-14	3,692	sd. sh. drlg.
Packard Pet., No. 1 Kelly, Torrance, Los Angeles	22- 4-14	4,162	sd. sh. drlg.
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14- 4-14	5,025	tested wet
Wilton Oil, No. 4, Torrance, Los Angeles	22- 4-14	4,901	sd. sh. drlg.
Star Pet., No. 2 G & A, Torrance, Los Angeles	23- 4-14	2,596	sd. sh. drlg.
Silver Beach Oil, No. 1, Torrance, Los Angeles	23- 4-14	4,941	sd. sh. drlg.
Imperial Gypsum, No. 2 Getty, Torrance, Los Angeles	14- 4-14	4,284	sd. sh. drlg.
Imperial Gypsum, No. 3 Pathoff, Torrance, L. A.	14- 4-14	3,747	cleaning out
Woolner Oil, No. 4 Lomita, Torrance, Los Angeles	14- 4-14	3,754	will deepen
Zenith Oil, No. 1, Torrance, Los Angeles	5- 5-14	3,570	sd. sh. drlg.
C.C.M.O. Co., No. 8, Torrance, Los Angeles	15- 4-14	3,723	P.B. 3,425
C.C.M.O. Co., No. 13, Torrance, Los Angeles	15- 4-14	4,989	O.S. drlg.
Hansco Oil, No. 1 Gladys, Torrance, Los Angeles	14- 4-14	5,000	O.S. drlg.
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3- 4-13	4,375	rig to pump
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,550	redrlg. 6,850
Union Oil, No. 62 Callender, Dominguez, Los Angeles	33- 3-13	5,283	sd. sh. drlg.
Shell Oil, No. 95 Reyes, Dominguez, Los Angeles	33- 3-13	6,670	sd. sh. drlg.
Barnsdall Oil, No. 4 Trust, Rosecrans, Los Angeles	18- 3-13	6,596	sd. sh. drlg.
Barnsdall Oil, No. 9 Rosecrans, Rosecrans, L. A.	18- 3-13	2,577	sd. sh. drlg.
Union Oil, No. 20 Rosecrans, Rosecrans, Los Angeles	18- 3-13	6,498	sd. sh. drlg.
Union Oil, No. 21 Rosecrans, Rosecrans, L. A.	19- 3-13	5,985	sd. sh. drlg.
Union Oil, No. 22 Rosecrans, Rosecrans, L. A.	19- 3-13	1,005	sd. sh. drlg.
Union Oil, No. 23 Rosecrans, Rosecrans, L. A.	18- 3-13	6,824	sd. sh. drlg.
Universal Consd., No. 4 Trust, Rosecrans, L. A.	18- 3-13	4,593	sd. sh. drlg.
Superior Oil, No. 1 Callender, Rosecrans, L. A.	20- 3-13	4,891	sd. sh. drlg.
Howard Oil, No. 1 Gordon, Rosecrans, Los Angeles	19- 3-13	6,596	redrlg. 4,851
Barnsdall Oil, No. 3 S.F., Newhall, Los Angeles	26- 4-17	6,553	cleaning out
Tide Water A. O. Co., No. 1 Porter, S. Fernando L. A.	27- 3-16	967	sd. sh. drlg.
Royal Lands., No. 1 Ramona, Castaic, Los Angeles	8- 4-17	730	sd. sh. drlg.
General Pet., No. 3 Blinn, Wilmington, Los Angeles	4- 5-13	3,643	cleaning out
General Pet., No. 16 Harbor, Wilmington, L. A.	2- 5-13	2,940	sd. sh. drlg.
General Pet., No. 10 S.P., Wilmington, Los Angeles	3- 5-13	3,338	O.S. drlg.
Allied Pet., No. 28, Wilmington, Los Angeles	32- 4-13	3,100	sd. sh. drlg.
Bankline Oil, No. 7-U.P., Wilmington, Los Angeles	2- 5-13	2,070	sd. sh. drlg.
Burns Oil, No. 1, Wilmington, Los Angeles	32- 4-13	2,791	sd. sh. drlg.
Hancock Oil, No. 10-B, Wilmington, Los Angeles	2- 5-13	3,191	O.S. drlg.
Hancock Oil, No. 24-C, Wilmington, Los Angeles	2- 5-13	4,192	P.B. 4,124
Hollywood Oil, No. 2 Baxter, Wilmington, L. A.	35- 4-13	2,709	sd. sh. drlg.
Macson Oil, No. 1-55-C, Wilmington, Los Angeles	32- 4-13	3,563	flow 210 b.d.
Macson Oil, No. 1-55-O, Wilmington, Los Angeles	32- 4-13	3,222	O.S. drlg.
Richfield Oil, No. 1-P.D., Wilmington, Los Angeles	2- 5-13	3,438	O.S. drlg.
Richfield Oil, No. 4-P.D., Wilmington, Los Angeles	2- 5-13	2,807	sd. sh. drlg.
Richfield Oil, No. 5-P.D., Wilmington, Los Angeles	2- 5-13	3,644	O.S. drlg.
Richfield Oil, No. 7-P.D., Wilmington, Los Angeles	2- 5-13	2,773	O.S. drlg.
Richfield Oil, No. 9-P.D., Wilmington, Los Angeles	2- 5-13	2,060	sd. sh. drlg.
Richfield Oil, No. 1 Victory, Wilmington, L. A.	35- 4-13	3,456	flow 130 b.d.
Richfield Oil, No. 3-P.G., Wilmington, Los Angeles	2- 5-13	2,985	O.S. drlg.
Royalty Serv., No. 1-P.E., Wilmington, Los. Angeles	2- 5-13	3,095	sd. sh. drlg.
Republic Pet., No. 1 Harbor, Wilmington, L. A.	2- 5-13	3,506	O.S. drlg.
Republic Pet., No. 2 Harbor, Wilmington, L. A.	2- 5-13	3,271	O.S. drlg.
Republic Pet., No. 3 Harbor, Wilmington, L. A.	2- 5-13	2,775	sd. sh. drlg.
Tide Water A. O., No. 1 Ban., Wilmington, L. A.	29- 4-13	4,594	sd. sh. drlg.
Universal Consd., No. 1 Newport, Wilmington, L. A.	2- 5-13	1,972	sd. sh. drlg.
Universal Consd., No. 4 Newport, Wilmington, L. A.	2- 5-13	4,078	O.S. drlg.
Union Pacific R.R., No. 84, Wilmington, Los Angeles	3- 5-13	3,311	O.S. drlg.
Union Pacific R.R., No. 87, Wilmington, Los Angeles	3- 5-13	1,797	sd. sh. drlg.
Union Pacific R.R., No. 9-E, Wilmington, Los Angeles	3- 5-13	4,085	O.S. drlg.
Union Pacific R.R., No. 11-E, Wilmington, L. A.	3- 5-13	2,141	sd. sh. drlg.
Union Pacific R.R., No. 1-P.D., Wilmington, L. A.	3- 5-13	3,936	sd. sh. drlg.
Union Pacific R.R., No. 2-P.D., Wilmington, L. A.	3- 5-13	4,130	O.S. drlg.
Wilgate Oil, No. 1 Harbor, Wilmington, Los Angeles	2- 5-13	5,000	sd. sh. drlg.
Wil. O. & D., No. 1 Harbor, Wilmington, Los Angeles	33- 4-13	5,700	tested wet
St. Helens Pet., No. 27 Monterey, Montebello, L. A.	2- 2-12	5,780	hd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2- 2-12	4,187	sd. sh. drlg.
St. Helens Pet., No. 2 Eggleston, Montebello, L. A.	2- 2-12	4,191	sd. sh. drlg.
Union Oil, No. 1 H. & S., Montebello, Los Angeles	2- 2-12	5,770	flow 905 b.d.
Union Oil, No. 2 H. & S., Montebello, Los Angeles	2- 2-12	2,253	sd. sh. drlg.
V-8 Oil Co., No. 1 Estelle, Montebello, Los Angeles	2- 2-12	4,482	sd. sh. drlg.
West Mon. Oil, No. 2 Seavers, Montebello, L. A.	2- 2-12	2,371	sd. sh. drlg.
Standard Oil, No. 1 McDonald, Montebello, L. A.	2- 2-12	4,534	sd. sh. drlg.
Herley-Kelley, Inc., No. 1 Burke, Montebello, L. A.	2- 2-12	5,597	tested wet
McVicar & Rood, No. 2 Manz, Montebello, L. A.	2- 2-12	3,376	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, L. A.	2- 2-12	6,412	sd. sh. drlg.
Security L. & W., No. 1 Tobey, Whittier, L. A.	8- 2-11	1,350	sd. sh. drlg.
Hilldon Oil, No. 4 Amebco, North Long Beach, L. A.	13- 4-13	4,494	sd. sh. drlg.
Hilldon Oil, No. 1 Dominguez, N. Long Beach, L. A.	14- 4-13	7,739	cleaning out
Johnston Drlg., No. 34, Long Beach, Los Angeles	13- 4-13	2,070	sd. sh. drlg.
Texas Co., No. 1 Wilson, Long Beach, Los Angeles	29- 4-12	4,208	sd. sh. drlg.
De Soto Oil, No. 1, Long Beach, Los Angeles	30- 4-12	3,891	sd. sh. drlg.
J. E. F. Oil, N. 1 Schaaf, Huntington, Los Angeles	36- 5-11	4,400	pump 120 b.d.
Texas Co., No. 3 Pearce, Huntington, Orange	2- 6-11	4,497	P.B. 4,030
Brea Canyon Oil, No. 48, Brea Canyon, Orange	2- 3-10	4,640	sd. sh. drlg.
Battersby, J. M., No. 1 Carmenita, Orange	21- 3-11	4,252	sd. sh. drlg.
Alford Dev., No. 1 Yorba, Richfield, Orange	29- 3- 9	1,353	sd. sh. drlg.
Shell Oil, No. 1 Cuff, Richfield, Orange	29- 3- 9	2,790	sd. sh. drlg.
Shell Oil, No. 1 Hemphill, Richfield, Orange	30- 3- 9	2,090	sd. sh. drlg.
Millerand Pet., No. 1 Miller, Yorba, Orange	22- 3- 9	1,734	bailing
Brown & Co., No. 2 Hurley, Yorba, Orange	22- 3- 9	1,330	sd. sh. drlg.
Beth Oil, No. 1 Dillingham, Yorba, Orange	21- 3- 9	2,351	cmtd. 2,256
Signet Oil, No. 2 Kraemer, Yorba, Orange	21- 3- 9	2,253	sd. sh. drlg.
Pearl J. Oil, No. 1 Dobashi, Yorba, Orange	21- 3- 9	1,801	sd. sh. drlg.
A. V. Oil, No. 1 Costa Mesa, Orange	16- 6-10	3,187	sd. sh. drlg.
Congress Oil, No. 1, Santa Ana, Orange	36- 3- 9	3,014	P.B. 2,980
South. Counties Oil, No. 1 Club, Serrano, S. Bernard.	22- 2- 8	279	sd. sh. drlg.

OKLAHOMA

Week Ending July 2

NORTHERN OKLAHOMA

Adair County

Maddon-Penn Mutual Life Ins. Co., C S½ NE NW sec. 5-16-24. T.D. 520 ft.; S.D.

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. T.D. 2,764 ft.; D. &A.

Canadian County

Supreme Oil Co. No. 1 Tilly, NW NW NE sec. 20-12-10w. T.D. 115 ft.; crooked hole; to skid.

Cimarron County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. T.D. 7,682 ft.; opened and flwd. 298 B.O. and 414 B. W. in 21 hrs.; reopened and failed to flw.

Coal County

Carter et al No. 1 Mote, C E½ SW NW sec. 19-2-9. Drlg. 3,950 ft.

Comanche County

Midnite O. & G. Co. No. 1 Howe, NW NW NW sec. 20-2n-12w. S.D. 334 ft.

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. T.D. 760 ft.; S.D.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Ellis County

E. Fletcher No. 1 Wahl, NW NW NW sec. 1-19-25w. T.D. 694 ft.; S.D.

Garfield County

I.T.I.O. No. 1 Kechin, C SE SE sec. 17-22-5w. Drlg. 3,080 ft.

J. E. Kendall et al No. 1-A State, SW cor. sec. 13-23-3w. Est. 2,000,000 ft. gas at 1,010-35 ft.; T.D. 1,070 ft.; S.D.

Garvin County

First Natl. Oil Co. No. 1 Butterly, NE NE SE sec. 22-1n-1e. Drlg. 1,964 ft.

Grady County

Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. T.D. 11,415 ft.; pipe stuck.

Greer County

J. H. Everitt No. 1 Graumann, NE NW NW sec. 11-5-21w. T.D. 550 ft.; S.D.

Hughes County

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. S.D. 1,050 ft.

Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. T.D. 6,286 ft.; plug. 5,612 ft.; drld. out to 5,660 ft.; flwd. 15,068 ft. B.O., wildcat allowable; cmtd. off wtr.; drlg. plug to T.D. 5,700 ft.

Troup & Strickland No. 1 Brown, NW SW NE sec. 32-6-8. S.D. 660 ft.

Kay County

Champlin Ref. Co. No. 1 Boehm, SW SW NE sec. 24-27-4. T.D. 950 ft.; S.D.

Helmerich & Payne No. 1 Sch. Ld., SW SE SW sec. 16-28-1w. Wilcox 3,530 ft.; 2nd Wilcox 3,603 ft.; T.D. 3,645 ft.; ran Schlumberger.

Clark C. Nye No. 1 Willin, SE SE SW sec. 24-27-4. Cg. 3,016 ft.; S.S.O.&G.; S.D. for mach.

E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kingfisher County

Hollenback & Haley No. 1 Zerger, C SE SW sec. 5-18-6w. T.D. 205 ft.; S.D. for gas.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Cribbs, sec. 28-7n-19w. Granite 1,660 ft.; T.D. 1,825 ft.; D.&A.

Anderson-Prichard Oil Corp. No. 1 Johnson, sec. 10-7-20w. T.D. 1,213 ft.; S.D. tools moved out; abd.

Anderson-Prichard Oil Corp. No. 1 Sch. Ld., SE SE SE sec. 14-6n-17w. Drlg. 1,120 ft.

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. T.D. 1,075 ft.; P.B. 900 ft.; wtr. at 921-23 ft.; S.D.

Hughes & Reese No. 1 Fultz, SE SE SE sec. 10-6-18w. S.D. 1,238 ft.

Lincoln County

Indian States No. 1 Bailey, NW NW NE sec. 2-12-5. T.D. 3,258 ft.

Logan County

Sinclair-Prairie No. 1 Crews, SW SW NE sec. 27-16-1e. T.D. 5,223 ft.; shot twice and flwd. 192 B.O. in 13 hrs.; acdz.; 3,000,000 ft. gas; S.I.

Superior Oil of Calif. No. 1 McCulley, C W½ NW NW sec. 26-16-4w. Drlg. 4,470 ft.

Muskogee County

T. P. Clants No. 1 Jennings, NW NW NE sec. 8-13n-19. S.D. 840 ft.

Heydrick No. 1 Paschall, NE SE NW sec. 22-13n-19. S.D. 678 ft.

Noble County

Big Chief No. 1 Hoy, SE SE SW sec. 33-21-2w. T.D. 1,860 ft.; S.D.

H. R. Hollenback No. 1 Mathews, C SW NW sec. 9-20-1. Rig.

Okfuskee County

C. W. Titus No. 1 Lehmar, C NE NE sec. 26-11-8. Drlg. 1,713 ft.

Oklahoma County

Fain Drlg. No. 1 Little, SW SW NE sec. 28-11-3w. Drlg. 930 ft.

Olson Oil No. 1 L. Vaneck, SE SW NW sec. 4-12-3w. W.O.C. 1,032 ft.

Okmulgee County

Manahan Oil Co. No. 1 Kennedy, NE NW NE sec. 31-14-11. Drlg. 1,310 ft.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW sec. 33-27-5. Gas 3,074 ft.; Miss. 3,154-68 ft.; no shows; S.D.O.

Norbia Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. T.D. 2,784 ft.

Norbia No. 2 Osage, SW SW SE sec. 30-22-9. T.D. 2,075 ft.; S.D.; good S.G.

Wah Sha She Oil Co. No. 1 Osage, NE NE NW sec. 4-28n-9. Drlg. 2,160 ft.

Payne County

Texas Co. No. 1 Logan, C W½ NW NW sec. 12-17-1e. T.D. 4,956 ft.; flwd. 348 B.O. in 13 hrs.; est. 600,000 ft. gas grav. 46; ran tbg. to 4,944 ft. and flwd. 275 B.O. in 6½ hrs.; opened and would not flow; S.I.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2n-15. S.D. 643 ft.; (mach. gone).

Supreme Oil Co. No. 1 Stevenson, SW SW SE sec. 27-3n-14. S.D. 75 ft.

Pontotoc County

Caloma Oil Corp. No. 1 Brents, SE NW SW sec. 4-1n-6. T.D. 1,707 ft.; S.D.; lost circ.

Farmers Mutual Royalty Corp. No. 1 Waite, NE NE NW sec. 9-5-5. Wilcox sd. 3,200 ft.; T.D. 3,234 ft.; P.B. to 2,880 ft.

H. W. Lee No. 1 Weatherby, NW SE NW sec. 24-1n-7. S.D. 700 ft.

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.

Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. Drlg. 2,013 ft.

Pottawatomie County

Atlantic Ref. Co. No. 1-A McCurry, NW NE SW sec. 6-6-4. Rig.

C. W. James No. 1 Henderson, NW NW NE sec. 4-5n-3. Rig.

Pure Oil Co. No. 1 Lack et al, SE SW NW sec. 3-6-5. T.D. 4,270 ft.; P.B. 4,100 ft.; W.O.C.

J. F. Smith et al No. 1 Henderson, NW NW NE sec. 4-5-3. Drlg. 3,408 ft.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW sec. 8-5n-7. Drlg. 1,320 ft.

Denver P. & P. No. 1 Mathis, SW NW SW sec. 7-6-6. Dol. 3,760 ft.; cmtg at 3,700 ft.; p. 45 B.O. in 24 hrs., 14% wtr.

Farmers Mutual Royalty Corp. No. 1 Sch. Ld., SE SE NW sec. 16-5-5. Drlg. 545 ft.

Indian States et al No. 1 Johnson, NW SE NE sec. 2-6-5. T.D. 3,004 ft.; P.B. 2,850 ft.; shot and S.D.O.

R. McQueen et al No. 1 Harris, SW SW SW sec. 30-7-6. Drlg. 2,170 ft.

Young & Newsom No. 1 Edgeman, SE SE SE sec. 17-7-6. T.D. 2,930 ft.; installing new equip.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. T.D. 2,147 ft.; W. O.C.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. T.D. 3,110 ft.; S.D.

Carter County

Texas Co. No. 1-B Cathey, SE NE NE

sec. 6-5s-1w. T.D. 5,685 ft.; P.B. 5,477 ft.; pmpd. 10 B.O.P.D.; pumpd. off in 6-8 hrs.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW sec. 21-7s-15. Drlg. 900 ft.

Creek County

L. B. Jackson No. 1 Berryhill, NW NW NW sec. 1-18n-10. Drlg. 250 ft.

Love County

Mosaad & Swainsberger No. 1 Barrett, N SE SE sec. 14-6s-2w. T.D. 1,890 ft.; S.D.

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. T.D. 5,961 ft.; P.B. 5,585 ft.; to drill by.

Marshall County

E. W. Hughes Drlg. Co. et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. S.D. 7,106 ft.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; 9,050 ft.; made several hd. flws., 37-grav. oil. placed on gas-lift.

Tillman County

Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 2,000 ft.; S.D.

KANSAS

Week Ending July 2 (Descriptions are East unless marked otherwise)

Barton County

Armer & Vernon No. 1 Seyfert, NW SW NE sec. 3-17-13w. Arb. 3,380 ft.; T.D. 3,398 ft.; acdz. and p. 10 B.O.P.H.; acdz. and no test.

Colonial Oil No. 1 Lust, NW NE sec. 19-17-13w. Drlg. 3,315 ft.

Crown Pet. Corp. No. 1 Wolf, SE SW SE sec. 36-19-12w. T.D. 3,237 ft.; est. 250,000 ft. gas and S.D.; U.R. 7-in.

R. E. Day et al No. 1 Feits, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Gardner & Murfin No. 1 Krug, SW SE sec. 16-16-13w. Drlg. 230 ft.

Kessler O. & G. No. 1 Bowman, SW NE sec. 22-20-16w. Drlg. 1,580 ft.

Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE sec. 16-16-11w. Arb. 3,322 ft.; T.D. 3,344 ft.; P.B. 3,333 ft.; swb. 58 B.O. and 212 B.W. in 6 hrs.; D.&A.

Western Kansas O. & R. Co. and Republic Nat. Gas Co. No. 1 Linsner, SW SW SE sec. 3-17-13w. Arb. 3,362 ft.; T.D. 3,367 ft.; 2,900 ft. O.I.H.; pot. 1,166 B.O.P.D.; no wtr.; comp.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. T.D. 2,008 ft.; S.G.; S.D.

Heilman & Harwood No. 1 Sawyer, SE NE NE sec. 10-28-7. Drlg. 2,110 ft.

Rex & Morris No. 1 Newby, SW SE sec. 16-26-7. T.D. 2,300 ft.; S.D.

Max Steinbuchel et al No. 1 Fox, NW SE NE sec. 25-26-3. Drlg. 2,465 ft.

Coffey County

Barner & Leiker No. 1 Knapp, SE SW NW sec. 27-22-14. S.D. 555 ft.; abd.

Western Kans. O. & R. Co. No. 1 Knapp, SW SW NW sec. 27-22-14. Spd.

Cowley County

Hutchinson O. & G. Co. No. 1-A Ketchen, SW SE SE sec. 11-35-5. Drlg. 2,340 ft.

Smith et al No. 1 Wilson, SE SW NW sec. 9-33-6. S.O. at 3,096 ft.; 600 ft. F.I.H. in 2 days; T.D. 3,149 ft.; P.B. 3,110 ft.; est. 60 B.O.P.D.; shot at 3,100 ft.; C.O.

Dickinson County

Fred Franks et al No. 1 Huffman, NW NW sec. 11-13-1e. S.D. 1,177 ft.

Ellis County

Cities Service No. 1 Hall, CEL W½ NE sec. 35-11-17w. Drlg. 3,502 ft.

Ellsworth County

Cities Service No. 1 Gibson, SW SE NE sec. 10-18-8w. R.U.R.

Cities Service et al No. 2 Schroeder "A," CNL SW sec. 29-17-9w. Drlg. 1,310 ft.

Finney County

Atlantic Ref. Co. No. 1 Nunn, C SE NE sec. 27-21-34w. T.D. 4,667 ft.; swb. 256 B.O. in 12 hrs.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft.; Wilcox 5,617 ft.; Arb. 5,629 ft.; T.D. 5,930 ft.; P.B. 5,025 ft.; rng. csg.

Greenwood County

Smalley & Stauffer No. 1 Samples, SE NW NE sec. 15-26-13. Rng. csg. 1,434 ft.

C. C. Whitaker et al No. 1 Bressner, NW SE sec. 8-26-13e. T.D. 1,498 ft.; 1,000,000 ft. gas est.; P.B. 1,495 ft.

Jackson County

Haverback et al No. 1 Marble Bank, C NE NE sec. 26-9-14. S.D. 2,588 ft.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. T.D. 2,566 ft.; lost circ.

Valerius & Marshall No. 1 Schierecks, C SE sec. 8-18-30w. R.U.R.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW sec. 24-17-4. T.D. 1,130 ft.; S.D.

Ness County

Jones & Lane No. 1 Page, SE NW sec. 36-18-26w. T.D. 3,270 ft.; S.D.

Mid-Continent Oil Co. No. 1 Collins, NW NW sec. 24-20s-26w. W.O.C. 1,128 ft.

Schoeppel & Elmore No. 1 Moses, C NW sec. 10-18-25w. T.D. 4,353 ft.; acd. p. 600 B.O.P.D.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW sec. 18-10-2w. Drlg. 340 ft.

Pawnee County

Kessler Oil & Gas No. 1 Dirks, NW NW NE sec. 14-20-16w. T.D. 3,836 ft.; no shows; D.&A.

Pratt County

Tidewater No. 1 Jarboe, C NL SE sec. 25-26-14w. T.D. 4,210 ft.; fsg.

Reno County

L. E. Douglas et al No. 1 Durand, SE SE SW sec. 3-23-5w. Drlg. 3,600 ft.

Rice County

C. L. Carlock No. 1 Heinz, NW SE sec. 8-18-10w. Drlg. 1,250 ft.

Marylyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. Drlg. 3,357 ft.

Shell Pet. et al No. 1 Cramm, CNL NE sec. 15-19-9w. T.D. 2,971 ft.

Riley County

Coronado Oil et al No. 1 Parks, SE SE sec. 16-10-8. Drlg. 1,350 ft.

Rooks County

Carter Oil Co. No. 1 Whitford, NE NE SE sec. 12-7-17w. T.D. 3,355 ft.; Arb.; P.B. 2,895 ft.; perf. and trtd.; S.S.O.; D.&A.

H. V. Elwell and Tree Oil No. 1 Blair, SE SW sec. 34-10-19w. Loc.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. Arb. 3,498 ft.; 500 ft. W.I.H.; T.D. 3,507 ft.; D.&A.

Fred Haines et al No. 1 Don, SE SE SW sec. 13-9s-16w. Drlg. 975 ft.

J. J. Hall No. 1 Kruse, SE NE sec. 3-10-16w. Rng. csg. at 2,630 ft.

F. O. Haun No. 1 Gavenhorst, SE SE SE sec. 7-6-16w. M.I.M.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. S.D. 1,410 ft.

Rush County

Phillips Pet. Co. No. 1 John Kees, C SE SE sec. 3-19-20w. T.D. 2,500 ft.; S.D. for csg.

Russell County

Aylward Prod. Co. No. 1 Salbach, SE NE sec. 31-14-14w. Drlg. 2,160 ft.

Coralena No. 1 Hefferman, NE SE SW sec. 34-14-13w. R.U.S.T. 2,913 ft.

J. J. Hall No. 1 Landon, SW SE sec. 11-15-14w. T.D. 3,100 ft.; 1,800 ft. O.I.H.; W.O.C.

Phillips Pet. Co. No. 1 Miller, C NW SW sec. 29-13-14w. K.C. L. 3,044 ft.; Arb. 3,310 ft.; T.D. 3,311 ft.; R.U.S.T.

R. H. Shields No. 1 Anschutz, SW SE sec. 2-14-13w. Drlg. 3,362 ft.

R. H. Shields No. 1 Rogg, CEL W½ NW sec. 9-15-13w. Drlg. 890 ft.

Smith & Unruh No. 1 Stielow, NW cor. sec. 32-11-14w. T.D. 2,552 ft.; S.D.

W. I. Southern No. 1 Sellens, NE SW SW sec. 17-15-13w. Drlg. 1,785 ft.

Web-Son O. & R. No. 1 Baxter, NW SE sec. 4-15-15w. Arb. 3,354 ft.; H.F.W.; T.D. 3,429 ft.; D.&A.

Sedgwick County

D. M. Crowe et al No. 1 Murphy, SW SW SE sec. 34-29-1w. Rig.

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. S.D. 2,248 ft.

Natl. Ref. No. 1 Trustee, SE NE sec. 8-27-2. Drlg. 2,707 ft.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. Drlg. 3,550 ft.

Stafford County

Austin Drlg. Co. No. 1 Slade, NE NW sec. 35-25-12w. Drlg. 3,873 ft.

Kenneth Harris No. 1 Barnes, NW cor. sec. 8-21-12w. Loc.

Sumner County

Hapenney et al No. 1 Evers, SE SE NE sec. 27-31-2e. O.W.D.D.; T.D. 2,015 ft.; W.O.C.

Murphy et al No. 1 Tate, SE NW sec. 31-32-2e. T.D. 3,747 ft.; Arb.; shot and C.O.

Woodson County

Cleveland Oil Co. et al No. 1 Fidelity, SE SE NE sec. 34-25-15. T.D. 1,436 ft.; est. 8 B.O.P.D.; grav. 34.6; C.O.

W. C. Cohen et al No. 1 Pendlay, NW SW sec. 5-26-15. T.D. 1,666 ft.; H.F.W.; D.&A.

Cyr Gas et al No. 1 Schrieber, SE SW SE sec. 8-25-14. Drlg. 1,265 ft.

Hill & McClure No. 1 Kelley, NW SE SW sec. 22-26-14w. T.D. 1,507 ft.; H. F.W.; D.&A.

Ward McGinnis No. 1-A Hill, C SW SE sec. 32-26s-15. Drlg. 760 ft.

Phil-Han Oil No. 1 Evans, NW SE sec. 21-23-15. T.D. 1,545 ft.; acdz.; no test.

Max Steinbuchel No. 1 States, NW NW NW sec. 15-26-14. Rng. csg. 820 ft.

M. J. Trott No. 1 O'Neal, SE SE sec. 21-25-14. Drlg. 687 ft.

Thomas County

Connelly et al No. 1 fee, NW SE SE sec. 4-10-35w. T.D. 132 ft.; S.D.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville County

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Drlg. hd. gr. sdy. L. 10,700 ft.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Rmg. 2,320 ft.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. T.D. 780 ft.; set 5½-in. 778 ft.; trtd. with 1,000 gal. acd.; tstd. dry; W.O.

Union Prod. Co. No. 3-C Skannel, NE cor. sec. 13-17-12. D.S.T. 3,005-21 ft. tstd. 60 ft. mud cut with oil; 520 ft. oil; 420 ft. S.W. in 15 min.; O. sd. 3,015-21 ft.; set 5½-in. csg. 3,108 ft.; tstd. S.W. 3,122 ft.; P.B. 3,105 ft.; perf. 3,096-3,104 ft.; swbg. S.W. 3,906-3,104 ft.; set cmt. plug 3,085 ft.; W. O.C.; T.D. 3,122 ft.

Union Prod. Co. No. 2 Thigpen-Herold, sec. 13-17-12. T.D. 3,162 ft.; D.S.T. 2,-980-3,030 ft.; rec. 400 ft. oil and 120 ft. mud and oil in 21 min.; set 7-in. csg. 3,109 ft.; P.B. 3,132 ft.; treated 2,000 gal. acd.; comp.; 528 B.P.D.; T. D. 3,132 ft.

Caddo Parish

R. E. Allison No. 1 Ellerbee et al., NW cor. sec. 27-18-14. Drlg. L. 5,610 ft.

Driscoll No. 1 Muslow, SE cor. NE NW sec. 4-20-15. R.U. to drill in at 2,197 ft.

J. T. Driscoll No. 4 Self, NE SE sec. 10-20-15. Set 6-in. csg. 2,186 ft.; T.D. 2,192 ft.; tstg.

Falcon Oil Co. No. 2 Glassell-Youree, SE cor. sec. 26-20-15. Drlg. sh. 925 ft.

E. W. McGoldrick No. 8 Muslow, sec. 32-21-15. Set 6⅝-in. csg. 1,351 ft.; T.D. 1,525 ft.

Midfield Oil Co. No. 2 Muslow, sec. 6-20-15. Comp.; 50 B.P.D.; set 6⅝-in. csg. 1,325 ft.; T.D. 1,596 ft.

J. F. Mitchell No. 2 Muslow, sec. 31-21-15. Set 6-in. csg.; T.D. 1,390 ft.

Oils, Inc., No. 1 Cazaux, sec. 10-16-13. Cg. 985 ft.

Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 6-in. csg. 2,185 ft.; P.B. 2,200 ft.; old T.D. 2,605 ft.; fsg. for lnr. 2,200 ft.; tstd. S.W.; W.O.

T. D. Sedberry No. 1 Stiles, sec. 22-21-16. Set 5½-in. csg. 1,015 ft.; pmpg. S.W.

Triple M Oil Co. No. 1 Boisseau, sec. 34-21-16. S.D.; W.O. 1,925 ft.

G. H. Vaughn No. 1 Stiles, sec. 21-21-16. Set 6-in. csg. 1,016 ft.; tstd. dry; T.D. 1,605 ft.; P.B. 1,035 ft.; D.&A.

Nat Weisman No. 2 Stiles, NW NW sec. 27-21-16. Set 6-in. csg. 1,030 ft.; tstg. 1,036 ft.

Claiborne Parish

Atlantic Ref. Co. No. 1 Enloe, C SE NW sec. 28-21-4. Set 10¾-in. csg. 826 ft.; W.O.C.

Harry Fotiades No. 1 King, sec. 11-20-5. Sat. L. 5,283-97 ft.; set 5½-in. csg. 5,-270 ft.; T.D. 5,302 ft.

M. J. Grogan No. 1 Whitman, C E½ NW NE sec. 2-20-15. Set 5½-in. csg. 5,173 ft.; T.D. 5,199 ft.; sat L. 5,179-87 ft. and 5,192-94 ft.; tstd. 168 B.P.D.; open tbg.; C.P. 200 lbs.; well died and used 3,000 gal. acd.; comp.; 140 B.P. D.; 17/16-in. ck.; T.P. 300 lbs.; C.P. 675 lbs.

Gulf Oil Corp. No. 1 Patton, NW cor. sec. 12-20-5. Drlg. L. 4,220 ft.

J. H. Henry et al No. 1 Tippett, sec. 33-21-4. Drlg. L.&sh. 4,128 ft.

Hollifield & McFarland No. 1 Kilgore, C SE NE sec. 12-20-5. Sat. L. 5,376-82 ft. and 5,385-88 ft.; set 5½-in. csg. 5,-375 ft.; T.D. 5,395 ft.

Lyons & Neely No. 1 Lowery, sec. 11-20-5. Drlg. sh.&L. 5,265 ft.

Magnolia Pet. Co. No. 2 Fowler, sec. 32-21-4. Sat. L. 5,193-96 ft. and 5,204-06 ft.; set 7-in. csg. 5,192 ft.; tstg. 5,218 ft.

Magnolia Pet. Co. No. 3 Lloyd, C SW SE sec. 2-24-5. Sat. L. 5,255-64 ft.; set 7-in. csg. 5,254 ft.; comp.; 1,015 B.P. D.; ½-in. ck.; T.P. 200 lbs.; C.P. 150 lbs.; T.D. 5,270 ft.

Oakes et al No. 1 Kilgore, NE cor. SE sec. 28-21-15. D.S.T. 4,188-4,225 ft.; tstd. dry in 5 min.; set 5¾-in. csg. 5,290 ft.; T.D. 5,313 ft.; set perf. lnr.; tstd. dry; washed with oil and acdz. with 2,000 gal. and 150 bbls. oil; swb. dry; think csg. seat gave away; recmt. csg.; cor. depth 5,270 ft.; cor. T.D. 5,-357 ft.; pulled tbg. and will acdz.

A. O. Olson No. 1 Kennedy, sec. 26-21-5. Set 10¾-in. csg. 738 ft.

Prairie O. & G. Co. No. 1 Lloyd, sec. 10-20-5. Drlg. sh.&L. 3,451 ft.

Sells Pet. Co. No. 2-A Patton, C NE NE sec. 11-20-5. Sat. L. 5,378-84 ft. and 5,387-97 ft.; set 5½-in. csg. 5,376 ft.; tstg. 5,398 ft.; comp.; 20 B.P.H.; ¾-in. ck.; T.P. 100 lbs.

Sklar Oil Corp. No. 3 Kilgore, C SW SW sec. 11-20-5. Drlg. 500 ft.

Sklar Oil Corp. No. 4 Kilgore, C SE SW sec. 11-20-5. Drlg. L. 3,175 ft.

Sloan & Zook No. 2 Patton, T.F., sec. 1-20-5. Sat. L. 5,308-11 ft., 5,312-13 ft. and 5,316-27 ft.; set 5½-in. csg. 5,365 ft.; T.D. 5,367 ft.

Union Prod. Co. No. 1-A Simms Unit, 660 ft. SW cor. sec. 29-20-5. R.U.

Concordia Parish

Morrison & Co. No. 1 Winston, sec. 43-7-9e. Drlg. sh. 2,810 ft.

De Soto Parish

S. S. Alexander No. 1 Stoll, NE cor. sec. 5-12-16. O.W.W.O.; old T.D. 6,002 ft.; set short string 5½-in. csg. 5,479 ft. reperf. 5,420-40 ft.; tstg. S.W. 5,440 ft. cmtd. all perf. above 5,180 ft., p. out cmt. and perf. 5,420-44 ft.; set 2-in. tbg. with pkr. 5,360 ft.; T.D. 5,453 ft.; used 5,000 gal. acd. and tstd. S.W. perf. 5,080-5,132 ft.; set pkr. 5,117 ft.; swbd. S.W.; S.O.; S.D.; old T.D. 5,453 ft.

Coleman et al No. 1 Franklin, NW cor. NE SE sec. 29-12-11. Drlg. sh. 2,710 ft.

Collins et al No. 1 Joiner, sec. 28-11-12. D.&A. 2,953 ft.

Petroleum Heat & Power Co. No. 2 Kavanaugh, NE cor. NW SW sec. 7-11-11. Tstd. dry 2,874 ft.; W.O.

Pet. Heat & Power Co. No. 1 Rives, sec. 20-12-11. Tstd. dry 3,350 ft.; W.O.

Rodessa O. & R. Co. No. 1 Boone, 330 ft. S and W, C sec. 25-11-11. R.U.

Grant Parish

C. R. Bowers No. 1 Harrison Est., sec. 21-8-5. Set 10-in. csg. 100 ft.

C. L. Thompson No. 1 McNeely Est., NE cor. sec. 10-6-3w. Ran Schlumberger; T.D. sh. 4,518 ft.; S.D.

La Salle Parish

Ark. Fuel Oil Co. No. 7-A Urania, 150 ft. SE cor. SW SW sec. 2-9-1e. Set 10-in. csg. 63 ft.; 7-in. csg. 1,495 ft.; T. D. 1,509 ft.; comp.; pmp. 100 B.P.D.

E. R. Waller No. 7 Tremont, SW NW sec. 30-20-5. Set 6-in. csg. 1,524 ft.; T. D. 1,529 ft.

Lincoln Parish

Harry Fotiades No. 1 Patton, C SE NW sec. 7-20-4. Drlg. L. 4,280 ft.

Magnolia Pet. Co. No. 3 Patton hrs., C NW NW sec. 7-20-4. R.U.

Madison Parish

Continental Oil Co. No. 1 Singer Mfg. Co., C NE NW sec. 3-15-11e. Set 15½-in. csg. 192 ft.; set 7-in. csg. 750 ft.

Morehouse Parish

W. J. Furlong No. 1 E. M. Clark, sec. 10-20-7e. T.D. hd. L. 7,023 ft.; T.A.

Natchitoches Parish

Roy Raines et al No. 1 Prudential Life Ins. Co., sec. 22-10-9w. Set 12-in. csg. 70 ft.; T.D. 1,250 ft.; S.D.

W. P. Ryan et al No. 1 Lambert, sec. 4-8-9. Top Bissm. sd. 2,952 ft.; D.S.T. 3,186-4,133 ft.; rec. 146 ft. mud in 28 min.; T.D. 4,133 ft.; T.A.

Red River Parish

Monte Oil Co. No. 1 McClelland, NW NW sec. 24-13-11. D.S.T. 967-74 ft. S.G.; D.S.T. 1,570-98 ft.; small S.G.; set 6-in. csg. 2,490 ft.; R.U. cable tool; sd. 2,530 ft., T.D.; W.O.S.R.

Sabine Parish

Hare et al No. 1 Stoby, SW cor. SE sec. 10-8-12. R.U. and S.D.

Hunter Co. No. 4 Bowman Hicks, sec. 13-7-13. Set 6-in. csg. 2,255 ft.; tstg. 2,462 ft.

F. B. King No. 1 Sabine Lbr. Co., sec. 19-7-13. Drlg. 2,610 ft.

W. L. McClanahan No. 1 Frost Lbr. Co., sec. 22-9-13. D.S.T. 2,927-3,028 ft.; tstd. est. 1,000,000 ft. gas and 9 jts. mud; ¼-in. ck.; drlg. sh.&L. 4,070 ft.

Major Oil Co. No. 2 Bowman-Hicks, C NE SE sec. 11-7-13. Drlg. 1,830 ft.

F. W. Martin Drlg. Co. No. 1 Sabine Lbr. Co., C W½ NE NE sec. 26-7-14. T.D. 4,508 ft.; P.B. 3,500 ft.; to test show 3,545-75 ft.; D.S.T. S.G. 3,545-75 ft.; D.&A.

Harry N. Morris No. 1-B Irving & Bishop, C SW NW sec. 18-7-12. R.U.

Plymouth Oil Corp. No. 1 Kezerle, sec. 9-7-13. Tstd. S.W. 2,494 ft.; S.D.

Albert Reich No. 1 Giaque, 330 ft. NE cor. SE NE sec. 27-7-14. Drlg. sh.&L. 3,385 ft.

Sklar & Sugar No. 1 Procella, NW NE sec. 18-7-12. Drlg. ch. rk. 2,477 ft.

H. M. Sneed No. 1 Leone, 330 ft. S line, 400 ft. W line, NW SE sec. 8-7-13. R.U.

Lee Whitehurst No. 1 Bowman-Hicks Lbr. Co., C W½ SE SE sec. 14-7-14. Set 9⅝-in. csg. 2,125 ft.; tstg. 2,410 ft.

Union Parish

Standard Oil Co. of La. No. 1 Frost Lbr., sec. 14-21-1e. Cd. hd. sd. 9,721-41 ft.; gas odor 9,731-37 ft.; hd. gr. sd. no show 9,741-61 ft.; bl. silty dolomite; cd. 9,779-91 ft.

Webster Parish

S. W. L. Backus No. 4 Pardee, sec. 3-22-11. D.S.T. 2,725-34 ft.; rec. 4 jts. oil

and mud; T.D. 2,734 ft.; set 7-in. csg. 2,729 ft.; W.O.S.R.; O.I.H.

Fohs Oil Co. No. 1 Crichton, sec. 33-21-10. Top lower Mar. 7,980 ft.; Bodcaw sd. 8,482-8,533 ft.; rng. 7-in. csg.; T.D. sdy. sh. 8,598 ft.; perf. csg. 8,491-8,518 ft.; tstg.

Hunt Oil Co. No. 8 Babb, sec. 13-21-10. Drlg. L.&sh. 5,650 ft.

Hunt Oil Co. No. 1 Bodcaw, C SW NE sec. 33-21-10. Drlg. sh.&L. 5,740 ft.

Hunt Oil Co. No. 2 Bodcaw, C NE SE sec. 33-21-10. Drlg. L.&sh. 4,960 ft.

Hunt Oil Co. No. 1 Davis, 660 ft. NE cor. sec. 23-21-10. Drlg. sh.&L. 5,260 ft.

Hunt Oil Co. No. 20 Hope. C NE NW sec. 24-21-10. Drlg. sh. 5,735 ft.

Hunt Oil Co. No. 1 Pardee, sec. 24-21-10. R.U.

Hunt Oil Co. No. 4 Webb, sec. 13-20-10. Drlg. sh.&L. 4,726 ft.

Magnolia Pet. Co. No. 4 Cox, 660 ft. NE cor. NE SE sec. 23-21-10. O.W.W.O.; formerly comp. for est. 29,000,000 ft. gas; old T.D. 4,557 ft.; arng. deepen.

Magnolia Pet. Co. No. 1 Crichton Unit, sec. 33-21-10. Drlg. sd.&sh. 7,310 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE sec. 17-23-11. Drlg. sh. 578 ft.

Magnolia Pet. Co. No. 1 Robbins Unit, sec. 21-21-10. Drlg. sd. 7,814 ft.

Midstates Oil Corp. No. 1 Welori Lbr. Co., C NW NW sec. 3-20-10. Top Tr. Pk. 6,029 ft.; no Holloway sd.; set 9⅝-in. csg. 6,121 ft.; top lower Marine 8,072 ft.; Top Bodcaw (cuttings) 8,597 ft.; set 7-in. csg. 8,656 ft.; T.D. 8,687 ft.

Harry Morgan No. 2 Hope, C SE SW sec. 24-21-10. Drlg. 610 ft.

North American Oil Consol. Co. No. 1 Barrow, C NE NW sec. 21-21-10. Drlg. sh. 4,020 ft.

Ohio Oil Co. No. 4 Bodcaw, Acct. 4, sec. 13-21-10. Drlg. sh. 2,200 ft.

Ohio Oil Co. No. 4 Cox, Acct. 2, C SW sec. 15-21-10. Drlg. hd. sd. 6,726 ft.

Ohio Oil Co. No. 1 A. H. Gray, Acct. sec. 26-21-10. Bodcaw sd. 8,043-8,101 ft.; set 7-in. csg.; T.D. 8,103 ft.

Ohio Oil Co. No. 4 Holloway, sec. 23-21-10. Old gas well; old T.D. 4,537 ft.; Holloway sd. 5,538-54 ft. and 5,601-08 ft.; set 4½-in. csg. 5,536 ft.; T.D. 5,633 ft.; comp.; 37 B.P.D.; ⅛-in. ck.; T.P. 0 lbs.; C.P. 100 lbs.

Ohio Oil Co. and Union Prod. Co. No. 1 Tillman-Gleason, sec. 28-21-10. Drlg. sh.&L. 7,798 ft.

A. G. Oliphant No. 2 Hodges, C NW SE sec. 34-21-10. 9⅝-in. csg. 5,689 ft.; top lower Marine 7,667 ft.; Bod. sd. 8,139-89 ft.; set 7-in. csg. 8,120 ft.; T. D. 8,205 ft.

Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. "D" stringer 8,473-98 ft.; Bodcaw sd. 8,565 ft.; cg. shly. sd. 8,606 ft.; set 5½-in. csg. 8,607 ft.; T.D. 8,642 ft.; on 45-min. test flwd. 98 bbls. oil with gas at est. rate of 750,000 ft. per day through 2-in. flow line from csg.; C.P. 450 lbs.; T.P. 480 lbs.; flwd. 118 bbls. in 3 hrs. on ¼-in. ck. through csg.; C.P. 890 lbs.; T.P. 0 lbs.; tbg. plgd.; rerun tbg.; completing.

Union Prod. Co. No. 1 Josey, sec. 27-21-10. Drlg. hd. sd. 7,495 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 2 J. A. Brookshire, sec. 66-12s-3e. Loc.

Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. R.U.

Anse La Butte—St. Martin Parish

Butte Oil Co. No. 2 Billeaud, sec. 117-9s-5e. Drlg. rk. 1,084 ft.

Louisiana-Crusader No. 3 Central Oil Co., sec. 86-9s-5e. S.D. 421 ft.

Mary G. Thomas No. 1 J. A. Broussard, sec. 117-9s-5e. S.D. 1,005 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, sec. 21-16s-12e. T.D. 2,309 ft.; 13⅜-in. csg. 1,885 ft.; S.D. 2,307 ft.

Baton Rouge—East Baton Rouge Parish

Wm. Helis No. 2 Dupiantier, sec. 65-7s-1w. Cd. sh.&hd. sd.; showed oil 6,454-65 ft.; drlg. sd. rk. 7,260 ft.

Wm. Helis No. 1 Harry Nelson, sec. 36-7s-1w. Cd. oil sd. 6,477-6,500 ft.; drlg. sdy. sh. 6,850 ft.

Bay St. Elaine—Terrebonne Parish

F. L. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 6 Wilbert Sons Lbr. Co., sec. 66-9s-11e. 7-in. csg. 6,982 ft.; T.D. 7,342 ft.; abd.

Humble O. & R. Co. No. 7 A. Wilberts, sec. 66-9s-11e. R.U.

Bayou Choctaw—West Baton Rouge

La. Crusader Oil Co. No. 3 Schwing, sec. 29-8s-11e. Drk.

Standard Oil Co. et al No. 1 Marley Cypress Co., sec. 29-8s-11e. R.U.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,010 ft.; T.D. of sdtrkd. hole 5,421 ft.; sdtrkd.; drlg. sh. 5,747 ft.

Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. 13⅜-in. csg. 1,976 ft.; 9⅝-in. csg. 8,156 ft.; drlg. sh. 8,888 ft.

Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. 13⅜-in. csg. 2,123 ft.; drlg. sh. 6,414 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 29 State, sec. 17-23s-20e. Loc.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and went dead; sanded up; S.D.

Burton-Sutton Oil Co. No. 24 School Ld., sec. 16-14s-13w. Drlg. sd. 4,599 ft.

Burton-Sutton Oil Co. No. 25 School Ld., sec. 16-14s-13w. Drlg. sd. 6,292 ft.

Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. T.D. 4,242 ft.; 9⅝-in. csg. 4,242 ft.; perf. csg. 4,221-30 ft.; flwg. P.L. oil; went dead; P.B. 4,232 ft.; drld. out to T.D. 4,321 perf. csg. 4,300-12 ft.; drlg. sdy. sh. 4,880 ft.

Cheneyville—Rapides Parish

Amerada Pet. Corp. No. 5 Weil Ld. Co., sec. 53-1s-2e. Drlg. sh. 6,405 ft.

Texas Co. No. 3 Weil Ld. Co., sec. 53-1s-2e. Drlg. sh. 8,150 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 9 Laws Realty Co., sec. 31-13s-10e. R.U.

Pan American Prod. Co. No. 4 Robichaux, sec. 11-13s-9e. T.D. 1,899 ft.; make D.S.T.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 2 State, Gulf of Mexico. Drlg. sh. 6,555 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 2,150 ft.; S.D.

Humble O. & R. Co. No. 3 Landry, sec. 34-10s-2e. T.D. 3,037 ft.; run csg.

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 6 Dog Lake, sec. 5-22s-16e. Drlg. sdy sh.&L. 5,454 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. Drlg. sd.&sh. 110 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, sec. 40-17s-15e. Drlg. sh. 5,739 ft.

Shell Pet. Corp. No. 6 Pellican, sec. 20-17s-15e. Drlg. sh. 9,014 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 29 State, sec. 38-23s-33e. Drlg. sh. 6,772 ft.

Hackberry—Cameron Parish

W. T. Burton No. 1 Duhon, sec. 29-12s-10w. R.U.; loc. abd.

W. T. Burton No. 1 F. Lacy, sec. 22-12s-10w. T.D. 3,683 ft.; 7-in. csg. 3,462 ft. perf. csg. 3,403-57 ft.; tstg.

Darryl Davis No. 1 Bickford, sec. 39-12s-10w. Drlg. sh. 1,320 ft.

Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. Drlg. sh. 3,186 ft.

John Merrick No. 2 Vincent, sec. 28-12s-10w. Drlg. sdy. sh. 3,148 ft.

Superior Oil Co. No. 2 Benson, sec. 30-12s-10w. T.D. 6,525 ft.; run csg.

Texas Co. No. 24-B State, sec. 12s-9w. T.D. 8,052 ft.; blew out; stk. D.S.; hole cleaned out to 7,659 ft.; P.B. 6,578 ft.; T.D. 6,686 ft.; P.B. to 6,480 ft.; sdtrkd.; drld. to 6,670 ft.; P.B. to 5,900 ft.; drlg. sh. 6,005 ft.

Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. 7-in. csg. 4,876 ft.; T.D. 5,940 ft.; S.T.; T.D. 5,023 ft.; P.B. 5,000 ft.; sdtrkd. hole; T.D. 6,236 ft.; 5-in. csg. 5,830 ft.; I.P. 503 B.P.D.; ⅜-in. ck.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, sec. 37-17s-9e. R.U.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. T.D. 10,404 ft.; top brkn. sec. oil show 10,303 ft.; 7-in. csg. 10,404 ft.; perf. csg. 10,390-96 ft.; tstd. mud and S.W.; sqzd. off; drlg. 10,555 ft.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. Drlg. sdy. sh. 6,604 ft.

Frio Oil Co. No. 1 Gulf fee, sec. 45-9s-2w. T.D. 7,092 ft.; 7-in. csg. 7,060 ft.; I.P. 350 B.P.D.; 13/64-in. ck.

Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 6,687 ft.; stk. D.S.; P.B. to sdtrk. at 4,635 ft.

Glassell & Glassell No. 5 Trushell, sec. 42-9s-2w. Drlg. sd.&gvl. 1,511 ft.

W. S. Noble et al No. 1 Ed Prather, sec. 45-9s-2w. 10¾-in. csg. 1,500 ft.

Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,770 ft.; P. B. 1,055 ft.; to stdrk.; cd. oil sd. 1,760 ft.; R.U. to pmp.

Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. T.D. 2,167 ft.; P. B. 1,595 ft.; 5½-in. csg. 1,585 ft.

Pet. Heat & Power Co. No. 1 Smith, sec. 45-9s-2w. Drlg. S.W. sd. 3,555 ft.

Stanolind O. & G. Co. No. 112 Crowley Oil & Mineral Co., sec. 48-9s-2w. 10¾-in. csg. 1,395 ft.; drlg. sd. 5,845 ft.

Superior Oil Co. No. 4 Iowa-Jennings, sec. 41-9s-2w. Drlg. sh.&L. 5,680 ft.

Superior Oil Co. No. 4 Clement, sec. 46-9s-2w. R.U.

Superior Oil Co. No. 7 Jennings-Heywood, sec. 41-9s-2w. Drk.

Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. Drlg. sh.&L. 7,739 ft.

Superior Oil Co. No. 14 Leckelt, sec. 42-9s-2w. T.D. 7,470 ft.; 7-in. csg. 7,470 ft.; drlg. sh. 7,980 ft.

Three Sands Oil Co. No. 1 Whisenhunt & Tyrell, sec. 46-9s-2w. R.U.

Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,255 ft.; fsg. for tbg.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien, Adams, sec. 9-17s-24e. Dredge canal.

Texas Co. No. 11 Lafitte, sec. 19-17s-24e. Drlg. sh. 5,612 ft.

Texas Co. No. 3 Madison Realty Co., sec. 17-12s-24e. R.U.

Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. Drlg. sdy. sh. 4,176 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 16 State, sec. 32-21s-19e. T.D. 4,280 ft.; P.B. 2,734 ft.; drlg. anhy. 3,075 ft.

Texas Co. No. 42 State-Lake, sec. 40-21s-19e. 9⅝-in. csg. 6,678 ft.; drlg. sd. rk. 7,382 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 19 State-Lake Pelto, sec. 17-23s-18e. T.D. 6,315 ft.; stk. D.S.; sdtrkd.; drlg. salt 6,524 ft.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, sec. 35-21s-22e. S.D. 5,526 ft.

Texas Co. No. 69 Leeville, sec. 27-21s-22e. Drlg. sh. 1,150 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Wurzlow, sec. 32-19s-19e. Top sd. S.G. 8,423 ft.; T.D. 8,566 ft.; 9⅝-in. csg. 8,521 ft.; found split csg. 7,063-73 ft.; found cmt. inside of D.S.; washing over stuck D.S. prep. to sdtrk.; sdtrkd. 7,935 ft.; drlg. sh. 8,268 ft.

Lockport—Calcasieu Parish

Continental Oil Co. No. 1 J. H. Moss, sec. 8-10s-9w. 10¾-in. csg. 986 ft.; T.D. 6,737 ft.; S.W. sd.; P.B. 5,340 ft.; perf. 5,314-24 ft.; flwg.; no ga.

New Iberia—Iberia Parish

Canal Oil Co. No. 10 Bernard, sec. 54-12s-7e. T.D. 4,256 ft.; P.B. 1,500 ft.

Canal Oil Co. No. 4 Sabatier, sec. 54-12s-7e. T.D. 2,560 ft.; P.B. 1,410 ft.

H. Foteades No. 7 Gulf Ld., sec. 25-12s-7e. Drk.

Wm. Helis No. 5 Bolivar, sec. 56-12s-7. T.D. 4,337 ft.; salt; P.B. and sdtrkd.; T.D. 3,594 ft.; 7-in. csg. 3,100 ft.; made sqz. job 3,070-60 ft.; P.B.; drlg. out to 3,145 ft.; swbd. dry; plg. scrn.; P.B. 3,170 ft.; W.O.S.R.

Wm. Helis No. 7 Bullock and Burke, sec. 25-12s-7e. Drlg. sh.&L. 5,745 ft.

Texas Co. No. 2 Burke, sec. 56-12s-7e. Drlg. L. rk. 7,016 ft.

Texas Co. No. 7 Duke, sec. 26-12s-7e. Cg. oil sd. 5,845 ft.

Texas Co. No. 2 Schwing, sec. 71-12s-7e. Drk.

Texas Co. No. 4 Grelino, sec. 25-12s-7e. 10¾-in. csg. 779 ft.; drlg. sdy. L. 4,259 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 3 Federal Ld. Bnk., sec. 34-8s-1e. T.D. 9,143 ft.; P.B. 7,370 ft.; to test 7,194-7,210 ft.; 7-in. csg. 7,359 ft.; tstg.

Port Barre—St. Landry Parish

Emerson Oil Co. No. 5 Sibille Oil Co., sec. 20-6s-5e. T.D. 3,475 ft; 5-in. csg. 3,470 ft.; tstd. S.W.; P.B. 3,432 ft.; tstd. S.W.; perf. csg. 3,405-22 ft.; W. O.S.R.

T. C. Markley No. 1 Lahaye, sec. 4-6s-5e. T.D. 4,775 ft.; 7-in. csg. 4,608 ft.

Pan American Prod. Co. No. 1 Lahaye, sec. 4-6s-5e. T.D. 5,426 ft., salt; top salt 5,422 ft.; P.B. to 3,900 ft.; drlg. sh. 3,459 ft.

Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. T.D. 1,351 ft.; S.D.

Texas Co. No. 22 Botney Bay Lbr. Co., sec. 4-6s-5e. T.D. 3,569 ft.; P.B. 3,434 ft.; set csg. 3,434 ft.; P.B. 3,249 ft.; pmpg. S.W.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 36 Orleans Lve. Bd., sec. 14-18s-15e. T.D. 7,500 ft.; 9⅝-in. csg. 7,485 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Orleans Levee Bd., sec. 18-19s-17e. M.I.R.

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 5,700 ft.; 9⅝-in. csg. 5,560 ft.; oil sd. 9,228-29 ft., 9,234-36 ft. and 9,617-18 ft.; oil and gas shows 9,617-94 ft.; top sd. oil show 10,079 ft.; T.D. 10,950 ft.; 5-in. csg. 10,928 ft.; sdy. sh. S.O.; cd. 10,737-10,823 ft.

Gulf Ref. Co. No. 5 State, sec. 17-19s-17e. Loc.

Gulf Ref. Co. No. 6 State, sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 10,703 ft.; run 7-in. csg.

Amerada Pet. Corp. No. 2 South Coast Corp., sec. 35-15s-19e. 11¾-in. csg. 2,666 ft.; drlg. sh. 10,482 ft.

Tide Water Asso. Oil Co. No. 1 South Coast Corp., sec. 33-15s-19e. R.U. and S.D.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 11 United Ld. Co., sec. 15-10s-4e. 10¾-in. csg. 308 ft.; T.D. 1,667 ft.; 7-in. csg. 1,248 ft.

Sorrento Pet. Corp. No. 2 White, sec. 22-10s-4e. R.U.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co. No. 4-B Calcasieu Natl. Bnk., sec. 29-7s-3w. M.I.M.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, sec. 36-10s-4w. T.D. 9,825 ft.; run 9⅝-in. csg.

Union Sulphur Co. No. 2 T. R. S. Farms, sec. 23-10s-4w. Drlg. sh. 9,014 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. T.D. 4,153 ft., salt; P.B. 3,987 ft.; P.B. 3,845 ft.; 7-in. csg. 3,827 ft.; drlg. plug.

J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 19-9s-12w. Top salt 2,270 ft.; S.D.; 2,273 ft.; P.B. 1,150 ft.; to sdtrk.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 863 fee, sec. 29-9s-10w. T.D. 3,484 ft.; 7-in. csg. 3,464 ft.; I.P. 543 B.P.D.; ⅛-in. ck.

Timbalier Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; twisted off drill collar; sdtrkd. jnk.; cd. sd. 5,332-36 ft.; tstd. 3 stands drlg. mud, oil and sd.; cd. oil sd. 5,336-43 ft.; T.D. 7,159 ft.; P.B. 6,500 ft. to strght. hole; W. O.C.

Valentine—Lafourche Parish

Wm. Helis No. 2 Valentine Sugar, sec. 3-17s-20e. Cd. oil sd. 7,464-7,500 ft.; cg. ahd.

Pan American Prod. Co. No. 1-A Community, sec. 99-17s-20e. R.U.

Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. T.D. 9,328 ft.; D.S. stk.

Pan American Prod. Co. No. 1 A. Robichaux, sec. 3-17s-20e. Loc.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 8 Manhattan Ld. & Fruit Co., sec. 26-21s-30e. 24-in. csg. 91 ft.; cd. sd., oil odor, 5,998 ft.

Villa Platte—Evangeline Parish

Amerada Pet. Corp. No. 1 A. Fournier, sec. 44-3s-2e. T.D. 9,046 ft.; 6⅝-in. csg. 9,037 ft.; I.P. 640 B.P.D.; ¾-in. ck.

Continental Oil Co. No. 1 A. M. Fontenot, sec. 46-3s-2e. Loc.

Continental Oil Co. No. 1 Oscar Pitre, sec. 44-3s-2e. Drlg. sh. 8,725 ft.

Continental Oil Co. No. 1 Opelousas, St. Landry, sec. 44-3s-2e. Drlg. sh. 6,816 ft.

Continental Oil Co. No. 1 Tate & McDaniel, sec. 44-3s-2e. Drlg. sh. 7,690 ft.

Continental Oil Co. No. 1 T. E. Vidrine, sec. 47-3s-2e. Drlg. sh.; T.D. 10,506 ft.; cmtd. btm. of hole with cmt.; P.B. 9,014 ft.; perf. csg. 8,975-84 ft.; tstd. S.W.

Continental Oil Co. No. 1 J. E. Vidrine, sec. 46-3s-2e. Cd. oil sd. 9,080 ft.; T.D. 9,110 ft.; tstg.

Vinton—Calcasieu Parish

J. B. Reddich No. 3 Vincent, sec. 34-10s-12w. Loc.

Welsh—Jeff Davis Parish

A. V. Peters No. 3 fee, sec. 22-9s-5w. T.D. 1,020 ft.; 6⅝-in. csg. 950 ft.; stk. bailer; S.D.

Stanolind O. & G. Co. No. 2 Conover, sec. 20-9s-5w. T.D. 7,353 ft.; well tried to blow out; P.B. 3,590 ft.; to sdtrk.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 3 Calcasieu Natl. Bnk., sec. 1-9s-6w. T.D. 9,250 ft.; fsg.

S. LOUISIANA WILDCATS

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; S.D. 6,021 ft.; prep. to resume drlg.

Calcasieu Parish

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., sec. 1-8s-13w. T.D. 9,480 ft.; abd.

Republic Prod. Co. No. 1 Sabine Tram, sec. 25-8s-14w. Old T.D. 9,620 ft.; fsg. for stk. D.S.

Union Sulphur Co. No. 1 Drew-Manuel, sec. 4-10s-11w. Drlg. sh. 6,662 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.; T.A.

Cameron Parish

Humble O. & R. Co. No. 1 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ sec. 9-12s-6w. Run 13⅜-in. csg. 2,703 ft.; drlg. sh. 8,633 ft.

Pure Oil Co. No. 1 Calcasieu Natl. Bnk., sec. 18-12s-4w. Drlg. sh. 4,197 ft.

Ash, Robinson No. 1 Mermentau Mineral Ld. Co., sec. 30-14s-6w. 10¾-in. csg. 910 ft.; T.D. 6,530 ft.; abd.

Superior Oil Co. No. 1 Sells, sec. 5-15s-8w. T.D. 6,350 ft.; 10¾-in. csg. 6,350 ft.; drlg. sh. 9,638 ft.

Iberia Parish

Texas Co. No. 1 State Lake-Peigneur, Twp. 12s-5e. R.U.

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd. at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; T.D. 7,623 ft.; P.B. 7,176 ft.; to sdtrk.; T.D. 7,348 ft.; 9⅝-in. csg. 7,263 ft.; T.D. 9,667 ft.; set 2,990 ft. of 5¾-in. csg. 9,667 ft.; drld. plug to 9,667 ft.; well blew out; blowing dry gas; capped well; unable to S.I. well due to leak in connections.

Jeff Davis Parish

Union Sulphur Co. No. 1 H. J. Liggett, sec. 36-7s-5w. R.U.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. S.D. 4,700 ft.

Lafourche Parish

Sun Oil Co. No. 1 Dilbert Stark, Brown Cypress Co., sec. 70-15s-15e. R.U.
Texas Co. No. 1 La Terre, sec. 1-20s-21e. Drlg. sd. 5,846 ft.

Orleans Parish

W. T. Burton No. 1 R. E. E. de Montluzin, sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. R.U.

Plaquemines Parish

Gulf Oil Corp. No. 1 Grand Prairie Lve Dist., sec. 6-20s-19e. T.D. 6,151 ft.; cd. O.S. 6,048-6,151 ft.; W.O.O.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.

St. Bernard Parish

Gulf Ref. Co. No. 3 State Lake, Twp. 12s-15e. 13⅜-in. csg. 1,558 ft.; 9⅝-in. csg. 6,486 ft.; drlg. sdy. sh. 10,075 ft.

St. James Parish

Continental Oil Co. No. 1 Colonial Sugars Co., sec. 46-12s-5e. Drlg. sdy. sh. 2,520 ft.
Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. 18⅝-in. csg. 302 ft.; 13⅜-in. csg. 2,473 ft.; T.D. 6,501 ft.; T.D. 7,013 ft.; 9⅝-in. csg. 6,520 ft.; tried to blow out; stk. D.S.; fsg.; T.D. 7,499 ft.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, sec. 97-11s-7e. Drlg. sh. 1,184 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Jeanerette Lbr. Co., sec. 14s-12e. Drlg. sd.&sh. 9,492 ft.
Texas Co. No. 6 State Lake Mongoulois, sec. 10-10s-9e. R.U.
Texas Co. No. 11 St. Martin Ld. Co., sec. 21-8s-7e. Drlg. sh. 7,367 ft.

St. Tammany Parish

Ozro B. Phillips No. 1 A. J. Planche, sec. 28-6s-10e. S.D. 3,100 ft.

Terrebonne Parish

Barnsdall Oil Co. No. 1 R. R. Barrow, Inc., sec. 41-17s-18e. Drlg. sh. 5,282 ft.
Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. Stk. 7-in. csg. at 11,684 ft.; T.D. 13,333 ft.; cmtd. 1,957 ft. of 5-in. csg. at 13,301 ft.; perf. csg. 13,254-66 ft.; C.O.; connections froze; S.I.
Fohs Oil Co. No. 1 State, sec. 41-19s-19e. 18⅝-in. csg. 246 ft.; cd. sd. S.G. 6,894-9,226 ft.; T.D. 12,511 ft.; 7-in. csg. 12,215 ft.; drlg. 13,347 ft.
Shell Pet. Corp. No. 1 Peters, sec. 73-18s-18e. Drlg. sh. 7,006 ft.
Shell Pet. Corp. No. 1 Realty Operators, sec. 10-18s-16e. 13⅜-in. csg. 2,461 ft.; drlg. sh. 8,878 ft.
Texas Co. No. 1 State, Callau Island Bay, Twp. 23s-14e. Loc.

Vermilion Parish

Magnolia Pet. Co. No. 1 J. B. Ferguson, sec. 5-12s-2w. 13⅜-in. csg. 3,084 ft.; T.D. 9,144 ft.; P.B. 7,150 ft.; tstd. 1,350 lbs. W.P. 16 min. on D.S.T., 1,140-50 ft.; recvd. mud and dist.; 7-in. csg. 7,130 ft.; drlg. plug.

Vernon Parish

Mike Halbouty et al No. 1 Gulf Lbr. Co., sec. 15-1n-6w. R.U.

ARKANSAS

Calhoun County

C. E. Murdock No. 1 Southern Kraft Corp., SE cor. NW NW sec. 17-14-13. R.U.

Columbia County

Fohs Oil Co. No. 1 Phillips. C NW SW sec. 15-17-19. S.G. 3,330-50 ft.; drlg. 3,365 ft.
Standard Oil Co. of La. No. 1 T. Crumpler, sec. 15-17-19. Top James L. 3,657 ft.; drlg. sdy. L. 3,758 ft.
Standard Oil Co. of La. No. 3 McKean, NE SE sec. 7-16-22. R.U.
G. H. Vaughn No. 1 Garrett, C NE SE sec. 14-17-20. R.U.
O. F. Whittaker No. 1 C. C. Hall, 70 ft. W line, 52 ft. S line, NW NW sec. 11-15-20. Drlg. gr. sh. 1,565 ft.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 580 ft. N line, 80 ft. E line, sec. 35-14n-3e. Set 10¾-in. csg. 230 ft.

Lafayette County

Standard Oil Co. of La. No. 1 J. L. Warren, 1,980 ft. E line, 610 ft. N line, sec. 18-16-22. Set 9⅝-in. csg. 2,047 ft.; T.D. 2,057 ft.

Little River County

M. E. Sanderson No. 1 Pinny; O.W.W.O.; reported abd. 1,300 ft.; NE cor. NE SW sec. 6-13-30. Drlg. sd. rk. 1,324 ft.
Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D.; W.O. 3,030 ft.

Lonoke County

J. F. Russell No. 1 Gunter, sec. 17-5n-10w. Drlg. 820 ft.

Miller County—Rodessa

F. W. Buford No. 2 Mitchell, 330 ft. NW cor. NE NW sec. 11-20-28. Set 5½-in. csg. 6,147 ft.; T.D. 6,180 ft.
Hill & Eastabrook No. 1 Sherman, SW NW sec. 29-19-28. R.U.
Red River Valley Oil Co. No. 1 Beck, sec. 34-15-26. Set 10¾-in. csg. 128 ft.; S.D. fuel 1,450 ft.
Texas Canadian Oil Corp. No. 2 Dickson, 330 ft. NE cor. SE NW sec. 11-20-28. Drlg. rd. bd. 4,656 ft.

Nevada County

Benedum & Trees Oil Co. No. 1 Blakeley & Suckle, 330 ft. SE cor. sec. 4-14-20. Top Tokin sd. 2,125 ft.; set 7-in. csg. 2,126 ft.; W.O.C.
B. L. Webb No. 1 Boswell, sec. 5-14-20. Set 10-in. csg. 63 ft.
Bruce E. Wallace No. 2 Haynie, SE cor. SE NE sec. 5-14-21. Sdy. sh. 1,194-1,204 ft.; tstd. mud, S.W. and oil 1,198-1,214 ft.; 30 min.; W.O.; T.D. 1,214 ft set 6-in. csg. 1,198 ft.; swbd. est. 10 bbls. oil; W.O.S.R. 1,214 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. Set 12½-in. csg. 108 ft.
A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. T.D. 2,900 ft.; lost circ.; P.B. surf.; drlg. out cmt. 2,400 ft.

Union County—Schuler

R. T. Adams No. 1 F. W. Powledge, sec. 7-18-17. Drlg. hd. rd. sd. and strks. sh. 5,927 ft.
Alice Sydney Oil Co. No. 4 Powledge, SW cor. NW SE sec. 7-18-17. Drlg. rd. sdy. sh. 6,928 ft.
Atlantic Ref. Co. No. 1 Dumas, NW cor. NE NW sec. 21-18-17. Top Jones sd. 7,602 ft.; top L. 7,679 ft.; set 7-in. csg. 7,690 ft.; W.O.C.; T.D. 7,693 ft.
E. M. Jones No. 3-A Murphy Ld. Co. NE cor. SE NE sec. 19-18-17. Drlg. rd. sdy. sh. 6,519 ft.
E. M. Jones No. 1 Rogers, SW SW sec 16-18-17. Top Jones sd. 7,570 ft.; cd. to 7,632 ft.; set 7-in. csg. 7,616 ft.; T.D. 7,637 ft.; comp.; 1,880 B.P.D.; ½-in. ck.; T.P. 700 lbs.; C.P. 950 lbs.
E. M. Jones No. 2 Rogers, SW SW sec. 16-18-17. Set 16-in. csg. 100 ft.
Lion Oil Ref. Co. No. 1 Dee, sec. 17-18-17. Drlg. rd.&gr. sh. 5,455 ft.
Lion Oil Ref. Co. No. 1 Clarence, SW cor. Lot 7, SW sec. 7-18-17. Drlg. rd.&gr. sh. 6,778 ft.
Lion Oil Ref. Co. No. 2 Marcus, 330 ft. SE cor. Lot 3, SE sec. 18-18-17. Drlg. 2,410 ft.
Lion Oil Ref. Co. No. 3 Marcus, SW cor. Lot 5, NW sec. 18-18-17. Drlg. 635 ft.
Lion Oil Ref. Co. No. 1 Marvin, NE cor. Lot 7, SW sec. 7-18-17. Drlg. rd. sdy. sh. 7,586 ft.
Lion Oil Ref. Co. No. 4 Mayfield, C Lot 3, NW sec. 18-18-17. Drlg. rd. sdy. sh. 7,592 ft.
Lion Oil Ref. Co. No. 5 Mayfield, sec. 18-18-17. Drlg. rd. sh. 5,847 ft.
Lion Oil Ref. Co. No. 6-B Edna Morgan, sec. 18-18-17. D.S. stk. 2,900 ft.; T.D. 7,257 ft.; rmg. to bttm.
Lion Oil Ref. Co. No. 1 Nelson, sec. 18-18-17. Top Jones sd. 7,535 ft.; top L. 7,640 ft.; set 7-in. csg. 7,693 ft.; perf. 7,582-7,604 ft.; comp.; 457 B.P.B.; 16/64-in. ck.; T.P. 875 lbs.; C.P. 1,025 lbs.; T.D. 7,700 ft.
Marine Oil Co. No. 1 Calloway, SE cor. Lot 4, NW sec. 18-18-17. Drlg. rd.& gr. sh. 5,970 ft.
Phillips Pet. Co. No. 3 Marks, C Lot 2 Top Jones sd. 7,504 ft.; top L. 7,608 ft.; set 7-in. csg. 7,784 ft.; T.D. 7,806 ft. perf. csg. 7,648-55 ft.; flwd. 181 B.P.H.; ⅛-in. ck.; T.P. 1,200 lbs.; C.P. 2,450 lbs.; at gas-oil ratio 700/1; killed; set cmt. retainer 7,640 ft. and recmtd.; perf. 7,650-55 ft. and 7,661-63 ft.; flwg. 296 bbls.; 24/64-in. ck. in 18½ hrs.
Phillips Pet. Co. No. 4 Marks, sec. 18-18-17. Drlg. rd.&gr. sh. 5,528 ft.
Roberts & Murphy No. 1 Justiss, 330 ft. SE cor. Lot 6, SW sec. 7-18-17. Set 10¾-in. csg. 1,771 ft.; drlg. rd.&gr. sh. 6,212 ft.

Union County—Other

Ark. Southern Oil Corp. No. 3-A Simmons, sec. 15-18-13. Set 7-in. csg. 2,222 ft.; T.D. 2,303 ft.; comp.; 20 B.P. D., 50% S.W.
J. R. Lockhart No. 1 Raulston, sec. 12 17-14. Cd. oil sd. 3,160-75 ft.; D.S.T. 3,172-75 ft.; rec. drlg. fluid and S.W.; cd. 3,175-85 ft.; S.O.; salty taste; set 7-in. csg. 3,185 ft.
Joe Modisette et al No. 2 Union Sawmill Co., sec. 8-18-12. D.S.T. 2,300-61 ft.; rec. drlg. mud; D.S.T. 2,355-85 ft. in Nacatosh, rec. 5 jts. oil and mud; arng. core ahead.
Phillips Pet. Co. No. 5 Bilyew, 460 ft. N line, 660 ft. W line, sec. 9-16-15. O.W. W.O.; former Shell dry gasser; comp.; blowing 31,000,000 ft. daily; old T.D. 2,294 ft.; cd. top Meakin 2,347 ft.; blg. to test; T.D. 2,348 ft.
W. D. Wingfield, Tr. No. 2 Kidd Est., SE cor. NW SW sec. 15-18-13. Sd. S.D. 2,257-2,300 ft.; set 6-in. csg. 2,250 ft.; T.D. 2,300 ft.; W.O.S.R.

TEXAS

Week Ending July 2

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 7-A Wilkes and Smith, J. W. Hall Sur. No. 11. T.D. 6,369 ft.; 5-in. csg. 6,369 ft.; perf. csg. 6,364-67 ft.; I.P. 13 B.P.H.; 5/32-in. ck.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 7 J. E. Alexander, H.T.&B. Sur. No. 28. Drk.
Humble O. & R. Co. No. 9 W. H. Schindler, H.T.&B. Sur. No. 30. Drk.
Stanolind O. & G. Co. No. 9 T. C. Edwards, Wm. Henry Sur. Drk.
Stanolind O. & G. Co. No. 3 Froberg, H. Stevens Sur. T.D. 6,107 ft.; run csg.
Stanolind O. & G. Co. No. 7 Matsushita, H. Stevens Sur. Drk.
Stanolind O. & G. Co. No. 7-C H. Moore, R. A. Magee Sur. Drlg. sh. 5,687 ft.
Stanolind O. & G. Co. No. 3-B Stockwell, A.C.H.&B. Sur. No. 2. Drk.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 1 David Kaufman, C. Breen Sur. P.B. and sidetracked; T.D. 10,268 ft.; 7-in. csg. on bttm.; tstg.
Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. R.U.
Harrison & Abercrombie No. 1 I. N. Troyer, Chas. Breen Sur. 9⅝-in. csg. 7,010 ft.; T.D. 10,133 ft.; tstg.
Harrison & Abercrombie No. 1 C. Larsen, Chas. Breen Sur. Drk.
Harrison & Abercrombie No. 1 West Texas Abst. Co., C. Breen Sur. Drlg. sh. 9,036 ft.

West Columbia—Brazoria County

Adrian Moore No. 4 Gulf fee, G. Tennille Sur. Drlg. L. 4,249 ft.
Frost & Dunman No. 1 Mary C. Masterson, G. Tennille Sur. Drlg. sh. 4,537 ft.
Mike Hogg No. 2 Hogg, M. Varner Sur. Drlg. sh. 4,786 ft.
Merrick Oil Co. No. 2 T. L. Smith, G. Tennille Sur. T.D. 5,050 ft.
Sterling O. & R. Co. No. 2 Powers, G. Tennille Sur. T.D. 5,625 ft.; 7-in. csg. 5,580 ft.
Texas Co. No. 24 Abrams, G. Tennille Sur. Drlg. sd.&sh. 4,569 ft.
Texas Co. No. 25 W. H. Abrams, G. Tennille Sur. Drlg. sd.&L. 2,130 ft.
Texas Co. No. 3 Rebecca Goldman, G. Tennille Sur. Drlg. sd.&bldrs. 710 ft.

Cedar Point Field—Chambers County

Standard Oil Co. of Texas-Salt Dome Oil Corp. No. 1-94 State. Drlg. 1,530 ft.

Greens Lake—Galveston County

Sun Oil Co. No. 2 Houston Farm Dev. Co., D. Buckley Sur. Drlg. sh. 3,312 ft.

Hitchcock—Galveston County

N. W. Hunter No. 1 Aarco Oil Co., J Spillman Sur. T.D. 5,176 ft.; 5½-in csg. 5,175 ft.; perf. csg. 5,146-52 ft.; flwd. S.W.; retesting.

Bammel—Harris County

H. M. Harrell et al No. 1 Polley, C. C McLean Sur. T.D. 6,286 ft.; perf. csg 6,257-61 ft.; flwg. 6 B.F.P.H.; ⅛-in. ck., 21% S.W.; jetting with gas; tstg.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 1 Paul Weaver, Reels & Trobough Sur. T.D. 4,493 ft.; rng, csg.

Eureka—Harris County

J. Frazier No. 3 Vollmer-Neiman, J. Reinerman Sur. Spd.
Houston Oil Co. No. 1-D Laura Lackner, H. Reinerman Sur. Drlg. sh. 4,810 ft.
Means & McGehee No. 1-B Lackner, H. Reinerman Sur. R.U.
Tide Water Associated Oil Co. No. 1 Laura Lackner, J. Reinerman Sur. T.D. 7,800 ft.; run 5½-in. csg.

Fairbanks—Harris County

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 2 R. S. Smith, J. Waugh Sur. Loc.
Amerada-Stanolind O. & G. Co. No. 2 F. Buillmore, G. Ayers Sur. 9⅝-in. csg. 1,235 ft.; T.D. 6,855 ft.
Amerada-Stanolind O. & G. Co. No. 1 P E. Cougat, Geo. Ayers Sur. 9⅝-in. csg. 1,218 ft.; drlg. sh. 6,359 ft.
Amerada-Stanolind O. & G. Co. No. 1 W Korasz, G. Williams Sur. 9⅝-in. csg. 1,216 ft.
Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. T.D. 6,864 ft.; perf csg. 6,839-43 ft.; would not flow; S.D
Gem Oil Co. No. 2 B. W. Reid, Geo. Ayers Sur. Drk
Gem Oil Co. No. 3 B. W. Reid, G. Ayers Sur. T.D. 6,852 ft.; tstg.
Showers & Moncrief No. 1 H. Ley, J.

MILLER

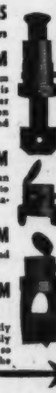
WILL increase YOUR OIL CHECKS

You will be surprised at the increased oil "runs" after a MILLER Sand Pump has cleaned out the sand and sediment that is holding back production. That's why the MILLER is in World-Wide use!

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet.

5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition



● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1445 COMPOSITE CATALOG

PATENTED
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NO. 1966026
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SAPULPA, OKLA. and KILGORE, TEX.

FOR SALE BY SUPPLY STORES EVERYWHERE

Waugh Sur. T.D. 6,847 ft.; comp.; no ga.
Skelly Oil Co. No. 1 J. H. Emmott, J. Waugh Sur. R.U.
E. L. Smith-Ownby Drlg. Co. No. 2 Gibson, G. Ayres Sur. T.D. 6,855 ft.; tstg.
Union Prod. Co. No. 1 Goodykoontz, W S. Powell Sur. T.D. 7,590 ft.; 5¾-in. csg. 7,506 ft.; perf. csg. 7,472-80 ft.; tstd. S.W.
Williams & Thompson No. 1 Ceperlo, G. Williams Sur. Drlg. sh. 2,539 ft.
Windsor Oil Co. No. 2 H. E. Ley, J Waugh Sur. T.D. 6,841 ft.; rng. csg.
Windsor Oil Co. No. 3 H. E. Ley, J. Waugh Sur. Drlg. sh. 2,667 ft.
Windsor Oil Co. No. 1 O. F. Parker, J. Waugh Sur. T.D. 6,843 ft.; tstg.

Friendswood—Harris County

Humble O. & R. Co. No. 12 L. S. Beamer, T. Choate Sur. Drlg. sh. 3,925 ft.
Humble O. & R. Co. No. 3 Herman Hospital, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 Houston Dev. Co., D. Putnam Sur. Drlg. sh. 8,297 ft.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 14 L. S. Beamer, T. Choate Sur. Drlg. sh. 4,296 ft.
Humble O. & R. Co. No. 1x 2-A Port City Ice Co., T. Choate Sur. 9⅝-in. csg. 1,042 ft.; drlg. sh. 5,415 ft.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.

Cordele—Jackson County

Magnolia Pet. Co. No. 1 S. E. Drushel, Sur. No. 18. Drlg. sh. 455 ft.
H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A Pace Sur. Cd. oil sd. 5,553 ft.; T.D. 8,198 ft., salt; top salt 8,156 ft.; 5-in. csg. 5,659 ft.; P.B. 5,545 ft.; W.O.C.

Cheek—Jefferson County

Shell Pet. Corp. No. 1 Ed. Pleasant, C. Hildebrand Sur. R.U.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 5 J. H. Phelan, A. Stivers Sur. Spd.

Hardin—Liberty County

Amerada Pet. Corp. No. 1 J. H. Cessna H. B. Johnston Sur. T.D. 7,655 ft.; W.O.C.
Amerada Pet. Corp. No. 1 Lynott and Buffam, J. Robeson Sur. Drlg. sh. 5,612 ft.
Ark. Fuel Oil Co. No. 2 W. J. Green, A. B. Hardin Sur. 10¾-in. csg. 1,918 ft. cg. 7,230 ft.
Atlantic Ref. Co. No. 2 J. F. Richardson, A. B. Hardin Sur. R.U.
Geo. Echols-Shell Pet. Corp. No. 1 J. H Cessna, H. B. Johnston Sur. Drlg. sh. 5,612 ft.
Gulf Oil Corp. No. 3 J. H. Cessna, H B Johnston Sur. T.D. 7,602 ft.; W.O.C.
Gulf Oil Corp. No. 2 A. B. Tullos, H. B. Johnston Sur. Drk.
Humble O. & R. Co. No. 1 M. H. Johnson, H. B. Johnston Sur. Loc.
Glen McCarthy No. 1 Oliver, H. B. Johnston Sur. T.D. 7,988 ft.; 7-in. csg. 7,836 ft.; perf. csg. 7,630-48 ft.; flwg. 9 B.P.H.; 11/64-in. ck.
Shell Pet. Corp. No. 3 J. H. Cessna, H. B. Johnston Sur. Drk.
Smith and McDannald No. 1 J. R. Rives, A. B. Hardin Sur. T.D. 7,614 ft.; 5½-in. csg. 7,606 ft.
Woodley Pet. Co. No. 1 Chambers, H. B. Johnston Sur. T.D. 7,651 ft.; W.O.C.
Woodley Pet. Corp. No. 2 Chambers, H. B. Johnston Sur. Drk.
Woodley Pet. Co. No. 1 Lynott & Buffam, James Robeson Sur. Loc.
Woodley Pet. Co. No. 1 Susan Wright A. B. Hardin Sur. Core oil sd. 7,606-17 ft.

McCrosky—Matagorda County

Pierce Est. No. 4-A Pierce. Drlg. sh. 1,305 ft.

Bay City—Matagorda County

Atlantic Ref. Co. No. 1 Gola, E. Hall Sur. T.D. 8,253 ft.; cd. sdy. sh. S.O. 8,130-8,209 ft.
Hamman Expl. Co. No. 1 C. W. Badouh, E. Hall Sur. Loc.
Hamman Expl. Co. No. 1 S. A Foote, E. Hall Sur. Drlg. sh. 8,650 ft.

Palacios—Matagorda County

Sun Oil Co. No. 1 F. K. Robeson, L. Goodwin Sur. Drk.

Spurger—Tyler County

Republic Prod. Co. No. 10 Hurd, N. Hurd Sur. Cg. 7,936 ft.
Republic Prod. Co.-Houston Oil Co. No. 11 Hurd fee, N. Hurd Sur. Loc.

GULF COAST WILDCATS

Brazoria County

Texas Co. No. 1 M. W. Jones, H.T.&B. Sur. 15½-in. csg. 49 ft.
Texas Co. No. 5 Freeport Sulphur Co., H. Burt Sur. Drlg. sh. 2,957 ft.

Burleson County

Red Bank Oil Co. No. 1 Coffield, E Sante Sur. T.D. 6,173 ft.; pmpd. 200 bbls. fluid in 18 hrs., 5 to 50% S.W.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Fort Bend County

Strake Pet. Corp. No. 1 G. L. Dew, D. Bright Sur. T.D. 6,410 ft.; P.B. and sdtrkd.; T.D. 6,350 ft.; trying to sidetrack 6,010 ft.
Strake Pet. Co. No. 2 Sugarland Industries, Wm. Stafford Sur. T.D. 5,500 ft.; P.B. to sdtrk.; drlg. sh. 6,870 ft.
Sam E. Wilson No. 1 Mt. Wood, Chas. Heywood Sur., C Lot 93. Drlg. 816 ft.

Galveston County

Sun Oil Co. No. 1 Cade, A. Dickinson. 13⅜-in. csg. 2,218 ft.; T.D. 8,090 ft.; shot csg.; recvd. 3,400 ft.; P.B.; W.O.; prep. to sdtrk. at 8,000 ft.

Harris County

Commerce Oil Co. No. 1 Meaderbrook Dev. Co., J. R. Harris Sur. Loc.
J. Frazier No. 2 Houston Deepwater Ld. Co., Thos. Earle Sur. Cg. sdy. sh. 5,803 ft.
O. W. Killam No. 1 M. A. Dodd, W.C R.R. Sur., sec. 12. R.U.

Jasper County

John Mayo No. 1 Cartwright, Legrande Sur. Drlg. sh. 5,609 ft.

Jackson County

J. K. Dorrance No. 1 F. J. H. Guethlein, Morris & Cummings Sur. Drk.
Magnolia Pet. Co. No. 1 West Ranch, Ramon Musquez Sur. T.D. 7,207 ft.; 7-in. csg. 5,680 ft.; perf. csg. 5,088-89 ft.; I.P. 1,121,000 ft. gas; 5/32-in. ck.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.; may abd.

Liberty County

Sun Oil Co. No. 1 Caroline Jordan, L. Gedruf Sur. 10¾-in. csg. 1,889 ft.
Texas Co. No. 1 Paige, James Hanney Sur. R.U.

Montgomery County

Deep South Pet. Corp. No. 1 Foster Lbr. Co., Preyor Bryan Sur. R.U.
E. R. Kirkpatrick No. 1 Foster Lbr. Co., T.&N.O. Sur. No. 7. 10¾-in. csg. 477 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. R.U.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. Drk.

Waller County

Stanolind O. & G. Co. No. 1 Freeman H.T.&C. Sur. No. 99. Drlg. sh. 10,430 ft.

Wharton County

Humble O. & R. Co. No. 1 Duncan, D. Wade Sur. Drlg. sh. 1,030 ft.
Humble O. & R. Co. No. 1 J. D Hudgins, Elizabeth McKenzie Sur. T.D. 7,500 ft.; abd.
Albert Plummer No. 2 M. Sorrell, S. F. Austin Sur. Drlg. sh. 3,105 ft.

S. W. TEXAS WILDCATS

Atascosa County

Altgell Mason No. 1 Vanegar, Francisco De La Garza Sur. S.D. 2,796 ft.

Bastrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 1,604 ft.
Ogden & Riddle No. 1 Riddle, Henry Warnell Sur. T.D. 1,773 ft.; I.P. 35 B. P.D.; pmpg.
Oscar Raez No. 1 Walters, Michael Grun Sur. Drlg. sh. 1,640 ft.; no report.
Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. R.U.
Walden Oil Co. No. 1 Graham, Andrew Mays Sur. No. 19. T.D. 2,714 ft.; abd.

Bee County

Dirks Bros. No. 1 Amberg, A.B.&M. Sur. R.U.

Bexar County

Fain-Harrison and Jenkins No. 1 Hansen, John Christopher Sur. 10-in. csg. 28 ft.; drlg. sh. 865 ft.
Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 737 ft.; 5⅛-in. csg. on bttm.; prep. to D.D.

Brooks County

Atlantic Ref. Co. No. 1 Mestena O. & G. Co., Las Mestenas Gr. Drlg. sh. 5,000 ft.

Caldwell County

Luling O. & G. Co. No. 1 Brown, Spencer Morris Sur. Drlg. 210 ft.
Banke Miller Oil Co. No. 1 Martindale Hector McNeil Sur. T.D. 3,223 ft.; prep. to core; no report.
C. R. Richardson No. 1 Schowe, T. Maxwell Sur., Abst. 188. T.D. 940 ft.; abd.
E. E. Whittington No. 1 Gilmer, H. C. Williams Sur. T.D. 1,704 ft.; abd.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogsberry Sur. R.U.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig. Co. Sur. 30. Drk.

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. Drlg. sh. 1,036 ft.

Duval County

Ark. Fuel Oil Co. No. 2 Cuellar, sec. 96. S.D. 2,818 ft.
James Foster No. 1 Foster, B.S.&F. Sur. No. 268. Drlg. 50 ft.
Humble O. & R. Co. No. 1 Harvey and Henderson Sur. 386. T.D. 3,060 ft.; abd.
Standard Oil Co. of Texas No. 1 Dolores Garcia Sur. 16-in. csg. 1,015 ft.; 10¾-in. csg. 3,487 ft.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

F. L. Thompson No. 1 Davis, G.B.&C.N. G. Sur. No. 1. Cd. oil sd. 3,722-59 ft.; sat. chk. logged at 4,964-76 ft.; cg. 5,618 ft.

Goliad County

Bunte Prod. Co. No. 1 Crews, Maria Jesusa DeLeon Sur. Drlg. 1,512 ft.

Gonzales County

Heard-Hall & Young No. 1 Clark, Robt. S. Armistead Sur. Spd. and S.D.

Guadalupe County

J. E. Clark No. 2 Anderson, Green DeWitt Sur. No. 11. T.D. 2,502 ft.; abd.
Glenn Stewart No. 1 Maierhoff, R. M. Forbes Sur. Drlg. sh. 1,509 ft.

Hidalgo County

Ralph Fair No. 1 Lynn, Juan Jose Hinojosa Sur. Drlg. sdy. sh. 5,726 ft.
Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. T.D. 3,296 ft.; D.S. stk.; pulled drk. in; S.D.
Wheelock & Collins No. 1 Temple Lbr. Co., Lino Cavaos, Porc. 57-A. T.D. 1,208 ft.; rmg.

Jim Hogg County

Humble O. & R. Co. No. 1 Anna Kelsy Bass, San Rafel Gr. 10¾-in. csg. 1,207 ft.; T.D. 7,517 ft.; abd.

Jim Wells County

E. Calloway et al No. 1 E. O. Cook, La vaca Grant Sur. T.D. 5,511 ft.; 7-in. csg. 5,350 ft.
Humble O. & R. Co. No. 1 Wm. Adams, Marcellino Lopez Gr., Abst. No. 28. M.I.M.
Humble O. & R. Co. No. 1 Tarrant, J Poitevent Sur. T.D. 6,520 ft.; D.S. stk. abd.
Magnolia Pet. Co. No. 1 Valades Hrs., La Anima Sola Gr. T.D. 6,390 ft.; W.O.O.
Mills Bennett Prod. Co. No. 1 W. R. Perkins, Lavaca Gr. S.D. 5,341 ft.
Rehmet & Wolcott No. 1 Balzon, I.&G. N. R.R. Sur., sec. 142, C Lot 27. 10¾-in. csg. 499 ft.; drlg. sdy. sh. 3,352 ft.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. R.U.
Southern Minerals Oil Corp. No. 1 J. R. Trussells, Lavaca Gr. 10¾-in. csg. 540 ft.; S.D. 4,000 ft.

Kendall County

Geo. Dorsey No. 1 Flanagan, J. Sweeney Sur. No. 12. S.D. 350 ft.

Kerr County

Edminston No. 1 Saul, Sur. 47. S.D. 55 ft.
H. C. Starkey No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 190 ft.

Kimble County

C. A. Dawson et al No. 1 Wilkinson, Brook and Burleson Part., B.S.&F. Sur. No. 23. T.D. 420 ft.; hung 7-in. csg. 326 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. 18⅝-in. csg. 198 ft.; drlg. sh. 6,530 ft.

La Salle County

Finley S. Ewing No. 1 Pugh, E. L. Garrett Sur. S.D. 780 ft.; T.A.
Eugene Garner No. 1 Yeager, Lot 6 Wallace Subd. of Sur. No. 39. S.D. 1,814 ft.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. T.D. 4,398 ft.; prep. to resume drlg.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J. Pierce Sur. 10¾-in. csg. 20 ft.; S.D. 480 ft.
J. B. Chew No. 1 Cartwright, J. Poitevent Sur. No. 1. Cg. 6,187 ft.
R. H. Feltner No. 1 Reed, I.&G.N. R.R Sur. 15. R.U.
Hanna et al No. 1 West, C. O. Ranland Sur. R.U.
McSpaddin & Tombs No. 1 Jones, John Ely Sur. Drlg. sh. 3,187 ft.
V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 210 ft.

McMullen County

Heard-Hall and Young No. 1-A Byrne, Geo. Pittuck Sur. No. 7. Loc.
S. M. Nesser No. 1 Franklin, J. Poitevent Sur. No. 33. Drlg. 2,212 ft.
G. G. Newton No. 1 Bryne, Geo. Pettuck Sur. S.D. 977 ft.
Red Bank Oil Co. No. 1 Nueces Ld. & Livestock, J. McGrain Sur. R.U.
C. C. Shumway No. 13 Shiner, sec. 52, Shiner Ranch Subd. T.D. 1,800 ft.; may abd.

Medina County

F. A. Brown No. 1 Senne, A.C.H.&B. Sur. 105. Logged 8 ft. of sat. oil sd. 802-11 ft.; (corrected); T.D. 903 ft.; 6⅝-in. csg. 805 ft.
J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. T.D. 930 ft.; fsg.
D. K. J. Oil Co. No. 1 Burrell. T.D. 2,039 ft.; S.D. after swbg. dry.
Gee Hayes et al No. 1 Conrad, J. Keppler Sur. S.D. 586 ft.
Geo. Hayes and Tarver No. 1 Mann, J. H. Isbell Sur. No. 10. Drlg. 110 ft.
R. Q. Stivers No. 1 Jungman, N. B. Rogers Sur. No. 33. S.D. 775 ft.
Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. Drlg. sh. 790 ft.
M. L. Walker No. 1 Zuberbulen, A. Bonany Sur. R.U.; S.D.
Ziegler et al No. 1 Wiemers, F. Thurman Sur. Loc.

Milam County

Clark & Morgan No. 1 Johnson, Juan Jose Acosta Sur. T.D. 1,971 ft.; fsg.
Texedo Oil Co. No. 1 Graham, Charles Cornea Sur. Logged S.O. 1,135-36 ft.; T.D. 1,808 ft.; fsg. for tbg.
Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.; C.O. set 7-in. csg. 1,167 ft.; S.D. 1,520 ft.
Western Gulf Pet. Co. No. 1 Batte, Jose Teal Sur. R.U.

Nueces County

Coast Line Oil Co. No. 1 State (Redfish Bay), State Tr. No. 32. Logged 7,325-56 ft.; T.D. 8,660 ft.; 7-in. csg. 8,637 ft.; perf. csg. 8,555-76 ft.; flwd. S.W. under 250 lbs. press.; tstd. S.W. below 8,500 ft.; sqzd. off perf.; W.O.C.

Refugio County

I. J. Allen No. 2 Rooke, Jose Miguel Addrite and Jose Maria Aldrite 6¼ Lge. D.S.T. 5,382-93 ft.; tstd. 400 lbs. press.; recvd. gas-cut mud.

San Patricio County

Humble O. & R. Co. No. 1 T. J. Carmody, sec. 22, Third Addn. of Taft farm lds. T.D. 6,702 ft.; abd.

Starr County

O. C. Borah No. 1 P. G. Garcia, Juan Salinas Sur. T.A. 563 ft.
O. C. Borah No. 1 Martinez, Joaquin Salinas Sur. S.D. 370 ft.; T.A.
O. C. Borah No. 2 Martinez, J. Salinas Sur. T.A. 455 ft.
Sun Oil Co. No. 1 Smith, A. J. Smith Sur. Loc.
Wheelock & Collins No. 1-A Guerra Santa Cruz Gr. Cg. sd. S.O.&G. 6,639 ft.
W. W. Zimmerman et al No. 1 Starr Co. Cattle Co., Juan De La Garza, Porc. 89. R.U.

Travis County

John R. Sterrett No. 1 Washington, Jose Antonio Navarro Sur. Drlg. L. 1,942 ft.
R. F. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. S.D. 1,050 ft.
Texas Empire Trading Co. No. 1 E. E Jourdan, Santigo De Valle Gr. 5½-in. csg. 611 ft.; S.D. 711 ft.; T.A.

Victoria County

Superior Oil Co. No. 1 A. R. Robertson, C Lot 10, Blk. R, Allison Richey Subd. R.U.

Webb County

French Oil Co. No. 6 Benavides, B.S.&F. Sur. No. 706. S.D. 2,220 ft.
Garrison & Paris No. 1 Benavides, Hale Subd. of M. Arispe Gr., C Blk. 107. R.U.
W. F. Houser No. 1 Garcia, Villareal Sur. 720 ft. tstd. 250 lbs. press.; D.S.T. 2,500-24 ft.; S.D.
O. W. Killam No. 1 Cuellar Josefa Cuella Sur. T.D. 3,509 ft.; abd.
E. J. Sawyer No. 1 Garcia-Villareal, J. M. Garcia Sur. Cd. oil sd. 2,465-87 ft.; S.D. 2,511 ft.

Williamson County

Fritz Fuchs No. 2 Bachmever, Hamilton White Sur. No. 3. T.D. 1,365 ft.; abd.
Marion Aldridge No. 1 Kroschewsky. 7-in. csg. 969 ft.; T.D. 1,084 ft. (corrected); P.B. 1,047 ft.; swbd. S.W.; P.B.

Wilson County

Lincoln Pet. Co. No. 1 Blake hrs. of Simon and Juan Dearocha Sur. Drlg. sh. 750 ft.; no report.
Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. Drlg. sh. 2,070 ft.; no report.

Zapata County

Thompson & Lowe No. 1 Ramirez, Blk. 6, Doyle Subd. of Porc. 18. Drlg. 50 ft. no report.

EAST TEXAS

(Border counties)

Rodessa—Cass County

Red Iron Drlg. Co. No. 1 Echols, Myers Sur. Drlg. L. 5,913 ft.

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. T.D. 4,574 ft.; prep. deepen.

Marion County—Rodessa

Ark-La. Gas Co. No. 1 Belcher, Coy Sur. Drlg. sh.&L. 5,584 ft.
Ark.-La. Gas Co. No. 1 Johnson, Alex. Johnson Sur. Drlg. ch. rk. 2,275 ft.
Bauman Dunn & Fisher No. 1 Graham, John Hanks Sur. R.U.
T. Bell et al No. 1 Moseley, D. Lane Sur. T.D. 2,768 ft.; S.D.
Gulf Oil Corp. No. 1 Blake, Jackson Sur. Drlg. sh. 2,990 ft.
Harvey, Henderson & Clardy No. 5-B Henderson, Ewing Sur. Cg. 6,021 ft.
Holcomb & Thomason No. 1 Bohn, Coy Sur. Drlg. sh.&L. 4,561 ft.
Holcomb & Thomason No. 1 Bramlett, 245 ft. S line, 20-ac. lse., 400 ft. E line, Gentry Sur. Set 5⅝-in. csg. 6,064 ft.; circulated with oil and swbg. to test; T.D. 6,082 ft.; perf. 6,052 ft.; swbd. some oil; cmtd. off bttm. hole and arng. acdz.
Hollandsworth Drlg. Co. No. 1 Hill, 15-ac. tr., Smith Sur. Drlg. sh. 2,462 ft.

Sam Killingsworth No. 1 McReynolds, 5-ac. lse., Coy Sur. Set 5-in. csg. 6,037 ft.; T.D. 6,048 ft.; comp.; 18 B.P.H.; ¼-in. ck.; T.P. 500 lbs.; C.P. 1,000 lbs.
Ohio Oil Co. No. 3 Moseley, Francis Sur. Set 7-in. csg. 6,112 ft.; T.D. 6,143 ft.
Phillips Pet. Co. No. 2 Denton, Coy Sur. Drlg. L.&sh. 4,320 ft.
Phillips Pet. Co. No. 1 Jackson, Hanks Sur. Drlg. L.&sh. 5,551 ft.
Shell Pet. Corp. No. 1-C Henderson Bennington Sur. Set 5-in. csg. 5,977 ft.; T.D. 6,002 ft.; comp.; 6 B.P.H.; ¼-in. ck.; T.P. 475 lbs.; C.P. 500 lbs.; perf. 5,975-6,000 ft.
Shell Pet. Corp. No. 4 Schluter, Smith Sur. Drlg. L.&sh. 4,250 ft.
Union Prod. Co. No. 9 Hutchinson, Coy Sur. Drlg. sh.&L. 4,179 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Top lower Marine 7,792 ft.; drlg. hd. sd. 8,487 ft.

Sabine County

Pet. Heat & Power Co. No. 1 Jasper State Bank, McDonald Sur. T.D. 2,506 ft., sd.; S.D.W.O.

Shelby County

Center Oil Co. No. 1 Windham, A. H. English Sur. T.D. 3,422 ft.; set 6⅝-in. csg. tstg.
Mallard & Locke No. 1 W. E. Roller Est., Sullins Sur. Drlg. 4,695 ft.
Porter Oil Co. No. 1 Pickering Lbr. Co., C. E. Henry Sur. T.D. 5,065 ft.; S.I.
W. A. Reddit No. 2 Pickering Lbr. Co P. J. Loggins Sur. Tried to blow out 4,019 ft.

WEST TEXAS WILDCATS

Andrews County

H. S. Forgerson No. 1 Lockhart-Brown C.O. 4,584 ft.
Perkins, Wright & McMillan No. 1 Cowden. D.&A. at 8,012 ft.
Rhodes & Tompkins No. 1 Emma Cowden, sec. 1, Blk. 44, T.&P. Sur. Tstg. 4,220 ft.

Cochran County

Devonian-Honolulu-Cascade No. 1-C-8 Duggan, sec. 8, Oldham C.S.L. Sur. Prep. re-treat 5,051 ft.
Texas Co. No. 1 Mallett Ld. & Cattle Co., sec. 7, Blk. G, P.S.L. Sur. M.I. pmp.; 5,058 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 30, Blk. W, T.&P. Sur. Rng. 2-in. 5,051 ft.

Crane County

Texas Co. No. 1-G Univ., sec. 7, Blk. 30, Univ. Sur. M.I.M.
T. B. Cranfill, Trustee, No. 1 J. B. Tubbs, Blk. 32, sec. 20, P.S.L. Sur. Drlg. 400 ft.
Gulf Oil Corp. No. 4 McKnight, sec 3 Blk. B-21, P.S.L. Sur. Drlg. 4,825 ft.

Crockett County

R. H. Henderson No. 1 University, Univ. Sur., Blk. 14, sec. 18. W.O.C. 1,316 ft.
Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. Drlg. 1,800 ft.

Culberson County

Harry J. W. Nichaus No. 1 C. M. Caldwell, sec. 15, Blk. 109, P.S.L. Sur. S.D.O. 2,500 ft.
Harry J. W. Niehaus No. 1 fee, Blk. 109, sec. 13, P.S.L. Sur. 1,800-ft. tst.; Spd. and S.D.
S. J. Isaacs No. 1 L. G. Sheddan, sec. 25, Blk. 52, P.S.L. Sur. Spd. and S.D.
Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 735 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. M.I.M.
J. F. Marrisey No. 1 I. J. McMahan, sec. 319, Blk. 1, H.&G.N. Sur. S.D. 1,050 ft.

Ector County

Sinclair Prairie No. 3-A Johnson, sec. 37, Blk. 43, T.&P. Sur. Drlg.
Sinclair Prairie No. 2-B P. Moss, sec. 40, Blk. 44, T.&P. Sur. Drlg. 520 ft.
Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. Drlg. 4,193 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Drlg. pig. 3,571 ft.

Fisher County

S. & D. Daube and Forest Dev. Co. No. 1 A. C. Bennett, sec. 51, Blk. 2, H.& T.C. Sur. Prep. tst. 3,693 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 5,180 ft., last report.

Gaines County

Eastland Oil Co. No. 1 R. C. Dunbar, sec. 24, Blk. A-12, P.S.L. Sur. Tstg. on pmp. 4,640 ft.
J. T. Ferryman, Jr., No. 1 C. H. Doak, D.&W. Sur., Blk. H, sec. 43. Drlg. 4,635 ft.
Riddle & Warr No. 1 J. B. Brown et al, sec. 26, Blk. G, C.&M.R.R. Sur. Drlg. 4,140 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 6,195 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. S.D. 180 ft.

Hockley County

Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Tstg. 5,125 ft.
Gulf Oil Co. No. 2 Mallett, Lge. 34, Labor 25, Loc.
Sid W. Richardson No. 2 Slaughter, Lge. 39, Labor 58, Maverick Sur. Drk.
Skelly Oil Co. No. 1 Elwood Est., Howard C.S.L. Sur., Lge. 15. Drlg. 3,805 ft.

Howard County

Lockhart Pet. Corp. No. 2 Robert Scott, W.&N.W. Sur., Blk. 29, sec. 86. Prep. set 7-in. 2,002 ft.
W. B. Powell, Trustee, No. 1 Guitar Trust, Blk. A, sec. 17, Bauer & Cockrell Sur. Drlg. 145 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. 4,570 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Tstg. for gas 4,159 ft.; swbg.; T.D. 4,225 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,702 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. W.O.C. 4,450 ft.

Martin County

W. D. Anderson No. 1 J. R. Vance, sec. 9, Blk. 36, T.&P. Sur. S.D.R. 2,850 ft.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Drlg. 1,140 ft.
Hartzell-Nawn & O'Hara No. 1 Wilhelm, sec. 24, Blk. A-1735, Indianola R.R. Sur. S.D.O. 655 ft.

Pecos County

Cox & Moore No. 1 White & Baker, sec. 43, Blk. Z, T.C.R.R. Sur. S.D. 8-in. 430 ft.
Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Reblde. drk.; S.D. 2,055 ft.
J. N. Gregory et al No. 1 Humble-O'Niell, H.&G.N. Sur., Blk. 10, sec. 74. Loc.
J. D. Kugle, Jr., No. 1 H. L. Cordz, sec. 101, Blk. 8, H.&G.N. Sur. Loc.
Magnolia Pet. Co. No. 1 McKee. P.B. 6,197 ft.; P.B. 6,180 ft.; W.O.C.
E R. Minshall et al No. 1 Haynie, sec. 28, Blk. 146, T.&St.L. Sur. Drlg. by bit 2,025 ft.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. by tools 7,190 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. S.D.O. 5,427 ft.

Reeves County

Ohio Oil Co. No. 1 Papham, sec. 18, Blk 54, T.&P. Sur. C.O. 2,030 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. Drlg. 7,021 ft.
Gursham-Hunter No. 1 C. M. Wellborn, sec. 142, Blk. 25, H.&T.C. Sur. Loc.
Robinson Drlg. Co. No. 1 Martin, sec 147, H.&T.C. Sur. P.B. 2,500 ft.; S.D.O.

Sterling County

Loffland Bros. & Moore Bros. No. 2 Parramore, sec. 78, Blk. 17, S.P.R.R. Sur. Drlg. 1,060 ft.
J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. Drlg. 2,095 ft.
W.F.W. Oil Co. et al No. 1 R. W. Foster, sec. 9, Blk. 13, S.P.R.R. Sur. U.R. 1,335 ft.

Stonewall County

Bert Fields No. 1 J. M. Lee, J. E. Pierson Sur. S.D. 3,170 ft.
General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 4,610 ft.
Percy Jones et al No. 1 fee, Austin & Williams Sur. 348, sec. 2. Drlg. 2,520 ft.
E. C. Lawson No. 1 Ada Pumphrey, Eli Chandlers Sur. Loc.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. Drlg. 4,860 ft.

Terrell County

Schermerhorn Oil No. 1 H. P. Allison, sec. 22, Blk. B-2, C.C.S.D. & R.G.N.G. Sur. 2,500-ft. test. Loc.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch. Sur. S.D. 4,495 ft.
J. B. Watson No. 1 Llano, C.S.L. Sur., sec. 16, 500-ft. test. Loc.

Upton County

W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. S.D. 730 ft.

Ward County

M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. Tstg. 2,092 ft. (last report).
J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. S.D.O 5,085 ft.
Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. S.D. 2,000 ft.
John Poindexter No. 1 V. Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Drk.
S. J. Rixford No. 1 W. B. Crump, sec. 2, Blk. 34, H.&T.C. Sur. Drlg. 2,255 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. S.D. 2,108 ft.; S.I. storage full 2,078 ft.; C.O. 2,105 ft.

Winkler County

Magnolia Pet. Co. No. 13 State-Walton, sec. 14 Blk. B-3, P.S.L. Sur. S.I. 3,231 ft.; last report.
J. R. Sharp No. 1 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. C.&P.
J. R. Sharp No. 2 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. Loc.

Yoakum County

R. H. Gill No. 1 S. J. Doxon, sec. 611, Blk. D, Gibson Sur. R.U.R.
Gulf Oil No. 1 Lucy K. Moore, sec. 897, Blk. D. W.O.C. 426 ft.
Heimerich & Payne No. 1 S. O'Dowd, sec 896, Blk. D, J. H. Gibson Sur. S.I. 5,035 ft.

E. C. TEXAS WILDCATS

Anderson County

J. G. Mayo et al No. 1 Royall & Davey, L. McClowd Sur., 12 mi. E of Palestine. Drlg. 2,587 ft.

Angelina County

K. L. McHenery No. 1 L. Henderson, Wm White Sur., 1 mi. E of Hamlet. Drlg. 4,690 ft.

Camp County

W. C. McGlothlin No. 1 Joe Venters, S. Wright Sur., 3 mi. SE of Leesburgh. D.&A. 5,710 ft.

Cherokee County

J. G. Mayo No. 1 Travis, T. Quevada Sur., 2 mi. SE of Mount Salmon. Drlg. 3,411 ft.

Dallas County

Plaza Oil Co. No. 1 Davidson Marchants Sur., 1 mi. NW of Seagoville. Cg. 2,783 ft.

Delta County

O. W. Killam No. 1 Delta Farms, J. Dollahite Sur., 4½ mi. NE Sulphur Bluff. Old T.D. 2,920 ft.; D.&A. 3,632 ft.

Falls County

M. H. Hayes No. 1 A. Garrett, J. M. Sanches Sur., 2 mi. NE of Lott field. Cg. 1,272 ft.

Franklin County

V. A. Hughes No. 1 W. E. Haydon, W. Landrum Sur., 1 mi. SE of Hagansport. M.I.M.

Grayson County

Epenhauser No. 1 J. M. Rogers, L. Kelly Sur., 1½ mi. NE of Whitesboro. Drk.

Gregg County

Humble O. & R. Co. & Gulf Oil Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. Elev. 272 ft.; tstg. 2,000,000 ft. gas; installing separator at 8,131 ft., P.B. depth.

Henderson County

Hi-Point Oil Co. No. 1 Dan Smith, 2½ mi. SE of Flag Lake, F. Brown Sur. D.&A. 3,465 ft.

Houston County

Humble O. & R. Co. No. 1 Daily & Taylor, J. G. Thompson Sur. Tstg. gas 5,851 ft.
Humble Oil & Ref. Co. No. 1 C. C. Hill, J. L. LaReviere Sur., Navarro Crossing field. M.I.M.
Sun Oil Co. No. 1 R. S. and H. H. Daily, J. G. Thompson Sur., 3 mi. SE of Navarro Crossing. Swbg. 5,892 ft.

Lamar County

Dahl & Barr No. 1 Lewis & McQuiston, R. Russell Sur., 1 mi. NE of Paris. S.D.W.O. 1,253 ft.

Leon County

Lone Star Gasoline No. 2 G. W. Lee, R. Hunter Sur., 5 mi. SE of Buffalo gas area. Drlg. 2,515 ft.

Limestone County

A. H. Larver No. 1 C. E. Herrod, Eli Davis Sur., 5 mi. S Grossbeck. Loc.

McLennan County

Lisle Steele No. 1 C. H. Cherry, M. Martinez Sur., 4½ mi. SE of Waco. S.D. 804 ft.
Russell & Thompson No. 1 L. L. Phillips, C. O. Campo Sur., 4 mi. S of Waco. S.D.W.O. 1,070 ft.

Madison County

C. K. Handy No. 1 D. G. Cannon, D. Arriola Sur., 6 mi. NW of Madisonville. D.&A. 1,024 ft.

Nacogdoches County

C. W. Voyles et al No. 1 M. E. Rider, O. W. Randall Sur., 3 mi. E of Caro. M.I.M.

Navarro County

R. G. Dickson No. 1 A. M. Swink, W. Hudson Sur., 3 mi. S of Richland. S.D. 300 ft.
B. T. Fearis No. 1 W. Montgomery, I. Redding Sur., 7 mi. S of Kerns. Loc.
J. O. Griffiths No. 1 Haynes, Able Parsons Sur. 4 mi NE of Kerens. Crooked hole; skd. drk.; drlg. 2,530 ft.
Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. S.D. 2,765 ft.
Topez Oil No. 1 M. Mizell, T. J. Chambers Sur., 14 mi. NE of Corsicana. Cg. 1,100 ft.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. S.D. 21 ft.
Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 220 ft.
C. E. Whitehead No. 1 R. H. Ringwald, A. Moore Sur., 1 mi. NW of Manchester. S.D. 200 ft.

Rusk County

J. W. Merrick et al No. 1 Peter Tipps, T. Uzzell Sur., 6 mi. S of East Texas field and 5 mi. N of New Salem. Deepening from 3,888 ft.; S.D.W.O. 3,983 ft.

Smith County

Combest et al No. 1 Dora Kendall; J. Williams Sur., 1¼ mi. SW of Jamestown. Old T.D. 2,798 ft.; washing 2,794 ft.
H. L. Hunt et al No. 1 S. H. Bradly, T. P. Payne Sur., 10 mi. E of Tyler at Chappel Hill. W.O.C. 7,528 ft.

Trinity County

Gassage et al No. 1 Mrs. C. H. Elliot, Joel Clapp Sur., 6½ mi. N of Trinity. Drk.

Upshur County

E. J. Dupree No. 1 W. A. Lawrence, R. Polly Sur., 4 mi. S of Gilmer. Drlg. 3,520 ft.

NORTH TEXAS WILDCATS

Archer County

Adams O. & G. Co. No. 1 C. Moer, sec. 21, C.&P. Sur., Blk. 3. S.S.O. 4,135-65 ft.; tstg.
Fain-McGaha No. 1 McCrory G, sec. 44, A.T.N.C.L. Sur. Drlg. 2,025 ft.
Gray & Thweatt No. 1 Ferguson, sec 2, S.P.R.R. Co. Sur. No. A-968. 6⅝-in. 4,050 ft.; W.O.C.
Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Testing at 5,105-16 ft.
Louis Sikes et al No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; Tstd. S.W.; S.D.O.
Thos. A. Jirik No. 1 Kunkel, sec. 2, P.R.R. Sur. A-1186. 10-in. 200 ft.; W.O.S.R.
Phillips Pet. Co. No. 1 J. C. Arthur, sec. 3, G.H.&S.H. Sur. No. A-158. Drlg. 5,375 ft.
Reno Oil Co. No. 10 H. Wilmut A, sec. 4, S.P.R.R. Sur. A-1044. S.S.O. 3,760-86 ft.; 6⅝-in. 3,750 ft.; treated 2,000 gals. acid; est. 50 bbls.; testing.

Baylor County

J. F. Morrisey Co. No. 1 Jno. White Est., sec. 2483, T.E.&L. Sur. 10-in. 100 ft.; W.O.R.
Riddels, Pipes & Holcomb No. 1 W. H. Nichols, Jr., sec. 117, B.B.B.&C. Sur. A-85. Loc.
Wilcox O. & G. Co. No. 1 W. H. Portwood, sec. 3144, T.E.&L. Sur. Drlg. 4,620 ft.

Clay County

Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. Drlg. 5,575 ft.
Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. S.D.O. 2,330 ft.

Cooke County

Sinclair Prairie Oil Co. No. 1 Mrs. J. D. Putnam, T. W. Ward Sur. A-1089. Loc.

Denton County

L. & E. Oil Co. No. 1 J. Hancock Life Ins. Co., J. Thomas Sur. S.D.O. 4,002 ft.

Foard County

Wynne & Ed S. Smith No. 1 Worsham, J. M. Clay Sur. Drlg. 3,095 ft.

Hardeman County

Hillsboro Oil Co. No. 1 Thomas, sec. 314, W.&N.W. Sur. Spudded and set surf. csg.

Jack County

Noah Daves No. 1 K. D. Baker, sec. 2709, T.E.&L. Sur. 4,000-ft. test; S.D.O. 1,930 ft.
Harper Pet. Co. 1 Mary E. Norman, A. Pearson Sur. A-1304. O.S. 1,937-38 ft.; testing.

Knox County

Roeser Pendleton and I.T.I.O. No. 1 G. H. Beavers, sec. 151, H.&T.C. Sur. Drlg. 1,050 ft.

Montague County

Humble O. & R. Co. No. 1 E. G. Adams et al, I. H. Meeks Sur. A-506. Drlg. 1,790 ft.
H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. S.D. 822 ft.
J. W. Sorrell et al No. 1 J. E. Walthall, Sam H. Smith Sur. A-662. S.D. 3,777 ft.

Wichita County

Aggers & Norwood No. 1 Ware, sec. 14, Cherokee Co. Sch. Ld. Loc.
C. W. Boller No. 1 S. Y. Collins, Charles Roberts Sur. A-540. 6⅝-in. 3,855 ft.; brkn. sdy. L. and O.S. 3,860-3,900 ft.; testing.
Continental Oil Co. No. 1 State Ins. Asylum, Blk. 1, Cherokee Co. Sch. Ld. 6⅝-in. 5,075 ft.; SL 5,076-5,128 ft.; drlg. plug.
Hanlon Buchanan, Inc., No. 1 Fassett & Tuttle-D, sec. 23, Cherokee Co. Sch. Ld. Drlg. 4,724 ft.
Madden & Goldsmith No. 1 Jackson, Blk. 20, Denton Co. Sch. Lds. S.D.O. 4,505 ft.; 6⅝-in. 2,742 ft.; perf. csg. 2,630-41 ft.; H.F. oil; testing.

Wilbarger County

Lloyd Brown No. 1 W. T. Waggoner, sec. 27, H.&T.C. Sur., Blk. 6. W.O.R.
Phillips No. 26 Waggoner NN, sec. 42, H.&T.C. Sur., Blk. 4. D.S.T. lime 3,746-

65 ft.; 1,600 ft. oil 30 min.; prep. to pipe and test.

Young County

Horwitz & Oldom No. 1 C. J. Taach B, sec. 248, T.E.&L. Sur. Drlg. 2,725 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W L, 1,880 ft. from N L, sec. 370, Geo. W. Denton Sur. Ordovician test; drlg. 4,335 ft.

Joe Gallagher No. 1 W. T. Harris, 200 ft. from S line, 1,050 ft. from E line sec. 347, G. W. Denton Sur. Drlg. 1,395 ft.

J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains. Rng. 7-in. 2,698 ft.

Hal Hughes No. 1 Tom Windham, 660 ft. from N and W lines SW¼ sec. 369, Geo. Hancock Sur. Drlg. 300 ft.

J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. Drlg. 2,390 ft.

Petroleum Drlg. Co. No. 1 Cook & Jordan, 760 ft. from E L, 1,838 ft. from N L, sec. 350, Geo. Hancock Sur. Ordovician. Drlg. 4,200 ft.

Wittmer Oil & Gas Properties, Inc. No. 1 R. D. Williams et al, 300 ft. from N line, 467 ft. from W line sec. 2,269, T.E.&L. Sur., 2 mi. NE Putnam, 4,500-ft. test. S.O. in Ellenburger 4,077 ft.; drl. sulf. wtr. 4,115 ft., T.D.; P.B.; shot 290 qts. 3,239-3,435 ft.; est. 50 B.W. and 10 B.O. P.D.; acidized 5,000 gal.; testing.

Coleman County

Anzac Oil Corp. No. 1 Burk, A. Williams Sur. Drlg. 896 ft.

R. M. Coleman No. 1 Ford, A. S. Lipscomb Sur. Drlg. 1,162 ft.

F. L. and E. R. Cooper No. 1 W. R. Stockard, 330 ft. from NL, 330 ft. from WL, N½ SE¼ sec. 23, T.&N.O. Sur. Rotary to 3,650 ft.; M.I.M.

S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, Asa Wickson Sur. Drlg. 2,500 ft.

Garrett Oil Co. No. 1 W. S. Smith et al, 4 mi. SE Coleman, J. Thiele Sur. Drlg. by csg. 2,060 ft.

Bob Murray No. 1 Dibrell, H. Kigan Sur., near Camp Colorado. Fsg. 2,575 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 1,000 ft.

Dorothy Oil Co. No. 1 Mrs. J. L. Johnson, 1,000 ft. from S line, 1,080 from W line, E½ SW¼ sec. 29-4, H.&T.C. Sur. Drlg. 725 ft.

Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. Tstg. 3,098 ft.

Nell A. Moore No. 7 Holcomb Heirs, 970 ft. from W line and 600 ft. from N line, SW¼ 1-4, H.&T.C. Sur. Loc.

Erath County

McGee Dev. Co. No. 1 Till Robinson, Wm. Ashworth Sur., 2 mi. SE of Desdemona. Drlg. 1,295 ft.

Fisher County

Forest Dev. Corp. & Daube No. 1 L. G. Bennett, 660 ft. from N and E lines, sec. 51-3, H.&T.C. Sur. Rotary to 4,500 ft.; 3 mi. SW of Rotan. Swbg., est. 30 bbls.; T.D. 3,699 ft.

Owens-Snebold & A. C. Varner No. 1 J. H. Millsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec. 61-2, H.&T.C. Sur. Drlg. 1,440 ft.

Haskell County

Algord Oil Co. No. 1 J. F. Jones, 330 ft. from S and W lines, E. T. Roche Sur. No. 4, Abst. 525. Loc.

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. Set 150 ft. of 12½-in.; S.S.G. 1,620-30 ft.; T.D. 2,686 ft.; P.B. to 2,684 ft.; swbd. 30 B.O. and 48 B.W.P.D.; deepening.

Jones County

Dunigan Bros. and Fred Hyer No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. U.R. 8-in. 2,657 ft.

R. B. Farris No. 1 Chas. Donohoo, 220 ft from S and E lines, N½ sec. 5, B.B.B &C. Sur. Drlg. 1,200 ft.

Grisham-Hunter Corp. No. 2 E. D. Appling, 1,140 ft. fr. E L, 1,208 ft. S L, NW¼ sec. 32, B.B.B.&C. Sur. Loc.

S. C. Herring No. 1 B. L. Ellis, 330 ft. fr. N and E lines, SE¼ sec. 8-15, T.&P. Sur. Loc.

Humble No. 1 Riley Horton, 330 ft. from N line, 330 ft. from E line, sec. 40-18, T.&P. Sur. Drlg. 2,600 ft.

Humble No. 1 Dallas Joint Stock Land Bank, 990 ft. from W line, 4,458 ft. from S line of M. Fragosa Sur. 267. Drlg. 1,620 ft.

Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub 18, Austin Williams Sur. 339. Set 10-in. 2,245 ft.; wtr. 2,900-05 ft.; H.F.W. 3,150 ft.; drlg. 3,700 ft.

Chas. J. Kleiner No. 1 Mrs. A. E. Carlson, 333 ft. from S and E lines, NW¼ sec. 19-3, H.&T.C. Sur. Drlg. 2,900 ft.

F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. Drlg. 3,565 ft.

N. H. Martin & Son No. 1 J. W. Wyatt, 150 fr. S L, 316 fr. E L, W 102 ac. in sec. 4-14, T.&P. Sur. Loc.

Oil States Exploration No. 1 J. E. Sellers, 100 ft. from S line, 330 ft. from W line, S. Andrews Sur. 191, H.F.W. 1,785 ft.; S.S.O. 2,085-90 ft.; drlg. 2,130 ft.

L. H. Pearson No. 1 B. L. Hood, 1,100 ft. from S and W lines, W. T. Evans Sur. No. 1. Drlg. 1,360 ft.

S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. S L, 2,428 fr. E L, J. E. Cockrell Subdiv. 2, G. Martinez Sur. 195. Loc.

Shaheen Oil Co. No. 1 T. B. McCoy, 595 ft. from N line, 660 ft. from E line, sec. 1-16, T.&P. Sur. Drlg. 1,400 ft.

W. L. Snoddy & C. C. Dodson No. 1 C. L. Steffens et al, 220 ft. from S and W lines SW¼ NE¼ sec. 32-15, T.&P. Sur. S.D.O. 1,850 ft.

Ungren & Frazier No. 1 W. E. Fellows, 990 ft. from N line, 330 ft. from E line S½ sec. 25-15, T.&P. Sur. Drlg. 2,096 ft.

Nolan County

Oyster, Harkrider et al No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft.; drlg. 1,200 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test. Drlg. 3,170 ft.

Forest Dev. & Helmerich & Payne No. 1 T. G. Hendrick, C sec. 1, A.B.&M. Sur Show gas and oil cored 4,838-45 ft.; T.D. 5,056 ft.; set 7-in. to 4,818 ft. to test showing 4,819-37 ft. in Marble Falls.

R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, sec. 38, L.A.L. Sur., 4,500-ft. test. Loc.

J. G. Hammond No. 1 Coker, 1,620 ft. from S line and 1,020 ft. from W line, sec. 159, B.B.B.&C. Sur. U.R. 8-in. 2,380 ft.; T.D. 2,610 ft.

D. W. Power No. 1 Black Ranch, C SE 80 ac. of NE½ sec. 391, T.E.&L. Sur., Ellenburger test.

Stephens County

Lone Star No. 1 E. H. Brooks, 400 ft. from S and W lines, NE 200 ac. of sec. 54-7, T.&P. Sur. Drlg. 675 ft.

Lone Star No. 1 J. S. McKee, 660 ft. from N line, 660 ft. from W line, sec. 41-7 T.&P. Sur. Drlg. 2,200 ft.

G. Willard Rich No. 1 J. W. Andrews, 330 ft. W line, 450 ft. S line, NW¼ sec. 39-7 T.&P. Sur. Flowed est. 200 bbls. in 4 hrs.; T.D. 3,675 ft.

Stonewall County

Bert Fields No. 1 R. P. Pierson, C of E 80-ac., E. A. & S. M. Lee Sur., Abst. 817. Drlg. 2,175 ft.

General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2. Set 13⅜-in. 2,119 ft.; set 10-in. 3,508 ft.; Cmt. 150 sacks; S.S.O. at 3,970 ft.; drlg. 4,508 ft.

F. B. Parriott No. 1 H. T. Carlile, 330 ft. from S line, 990 ft. from E line, SW¼ NE¼ sec. 293, Blk. D, H.&T.C. Sur., rotary to 5,500 ft., 6 mi. NW of Swenson. Set 8⅝-in. at 3,345 ft.; set 6-in. to 3,896 ft.; drlg. 4,615 ft.

Percy Jones No. 1 fee, 330 ft. W line, 220 ft. from N line, sec. 2, Austin & Williams Sur. 348. Spudded.

Taylor County

Lewis Production No. 1 L. Hensiee, 330 ft. from E L of 234-ac. tract in J. A Nabors Sur. No. 10 and sec. 27-17 T.&P. Sur., 4 mi. E of Merkel. S.S.O. 2,035-40 ft.; drlg. 2,347 ft.

Throckmorton County

Crawford & Brown No. 1 J. A. Matthews, Narcissa Thompson Sur. Est 10,000,000 ft. gas daily at 774 ft.

Jones & Stasney No. 1 C. T. Brockman 330 ft. S line, 330 E line sec 6 Comanche Indian Sur. Est. 60 to 75 bbls. 4,286-98 ft.

Marland-Drake No. 1 Dickie Bros., center T.E.&L. Sur. 2226. Set 5-in. 3,925 ft. S.S.O. 3,938-43 ft.; 5,000 gals. acid.; S. D.O.

Morris & Spoonts No. 1 Alden Bros., NW cor. county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 1,178 ft.

White & Duncan No. 1 Raynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83, Comanche Indian Reservation. Set 10-in. at 1,405 ft.; drlg. 2,300 ft.

Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. S.S. oil 3,902-06 and 3,914-20 ft.; T.D. 3,924 ft.; set 6-in. and cmt. 3,894 ft.; acid 5,000 gals.; swbg. oil and wtr.

Canadian Fields

(Continued from Page 98)

cleaning out preparatory to deepening from 2,508 feet.

On the Rogers-Imperial structure east of Coutts, Range Oil & Gas Co. No. 3, LSD 15, section 20-1-11w4, is around 2,000 feet.

In the Lethbridge area, Northwest Co. No. 1 Lethbridge Southern, LSD 8, section 1-8-21w4, is below 3,741 feet. Lethbridge Petroleums & Refining No. 1, LSD 12, section 11-8-22w5, is below 2,840 feet, after encountering some gas at 2,800 feet. The Bow Island gas sand is expected at 2,970 feet.

In the Steveville district, Anaconda Oil Co. No. 1, LSD 15, section 9-22-12w4, is deepening from 1,100 feet after cementing.

East Central Alberta

In the Vermilion area, East Central Alberta, Wain Town Gas & Oil Co. No. 1 Barr, LSD 16, section 26-50-7w4, is below 1,000 feet and planning to set 6-inch casing around 1,700 feet. The gas sand is expected around 1,800 feet.

Seek New Gas Field

It is reported Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary is planning development of a new potential gas field north of Calgary and north and west of the Clearwater River. Location of No. 1 well will likely be spotted this month. The area is in the vicinity of Innisfail, and has never previously been tested by actual drilling, though some preliminary work has been carried out.

Huron Oil Prospect

Huron & Bruce Oil Co. has been incorporated with $50,000 capital to develop a potential oil structure in Huron County, Ontario, where the company has nearly 8,000 acres leased. Acreage lies chiefly in Goderich and Hullett townships, extending southeast from the Goderich town limits. Officers of the company are: President, W. L. Forrest, Goderich; secretary-treasurer, F. Fingland, Clinton; directors, Howard C. Trewartha, John S. Evans, Roy Tyndall, Clinton; John F. Daly, Seaforth. No. 1 well will be drilled on the Howard Trewartha farm north of Clinton. Drilling for oil in Huron prior to 1865 resulted in an extensive salt development, with occasional shows of oil and gas. Most of the oil and gas formations of southwestern Ontario are present, but considerable areas, as well as the deeper formations, have never been thoroughly tested.

East Texas Fields

(Continued from Page 93)

E. Moores, 3,618-56 feet, 30 bbls. Stanolind Oil & Gas No. 46-A H. C. Maxwell, 3,742-3,802 feet, 55 bbls.

EAST CENTRAL TEXAS COMPLETIONS

Camp County

G. E. McGlothlins No. 1 Venters, dry and abandoned at 5,710 feet.

Anderson County

In the Long Lake field, Byrd-Frost No. 7 I.&G.N. R.R., 5,216-80 feet, 115,000,000 feet gas. F. H. E. Oil Co. No. 1 J. W. Focke, 5,311-44 feet, 144 bbls.

Delta County

O. W. Killan No. 1 Delta Farms, dry and abandoned at 3,632 feet.

Madison County

C. K. Handy No. 1 D. G. Cannon Heirs, dry and abandoned at 1,024 feet.

Henderson County

Hi-Point Oil No. 1 D. Smith, dry and abandoned at 3,465 feet. Peyton Brothers No. 1 W. W. Carter, 3,062-70 feet, 102 bbls.

Titus County

Byrd-Frost No. 8 C. W. Belcher, 4,247-75 feet, 353 bbls. V. A. Hughes No. 1 Flannigan, 4,224-4,342 feet, 242 bbls. R. E. Moore No. 1 W. E. Wilson, 4,262-75 feet, 223 bbls.

Van Zandt County

J. D. Wrathers No. 2 G. W. Carter, abandoned location.

Oil Man's Calendar

July

27-28—Charleston, W. Va., West Virginia Oil and Natural Gas Association.

August

31-Sept. 3.—Spokane, Wash., Pacific Coast meeting American Institute of Electrical Engineers.

September

5-9—Milwaukee, Wis., American Chemical Society.

14-16—Atlantic City, N. J., National Petroleum Association, thirty-sixth annual meeting, Hotel Traymore.

14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

27-29—St. Louis, Mo., National Association of Petroleum Retailers, annual meeting.

27-Oct. 2—El Paso, Tex., midyear meeting American Association of Petroleum Geologists.

October

6-7—Tulsa, Society of Automotive Engineers, National Regional Fuels and Lubricants meeting.

6-7—San Antonio, Tex., fall meeting petroleum division American Institute of Mining and Metallurgical Engineers.

6-8—Knoxville, Tenn., fall meeting of industrial minerals division of American Institute of Mining and Metallurgical Engineers.

10-14—Chicago, National Safety Congress, Stevens Hotel.

12-13—Indianapolis, Ind., Indiana Independent Petroleum Association, fall convention, Hotel Severin.

13-15—Los Angeles, Calif., Society of Automotive Engineers, Aircraft Production meeting, Ambassador Hotel.

18—Tulsa, annual meeting of National Stripper Well Association.

18—Tulsa, annual meeting of Oklahoma Stripper Well Association.

19-21—Tulsa, Independent Petroleum Association of America.

20-21—Los Angeles, Calif., industrial minerals division and petroleum division of American Institute of Mining and Metallurgical Engineers.

27-29—San Antonio, annual meeting, Texas Mid-Continent Oil and Gas Association.

November

1-5—Tucson, Ariz., regional meeting American Institute of Mining and Metallurgical Engineers.

14-18—Chicago, A.P.I. annual meeting, Stevens hotel.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending July 2 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
75⅝	55	6,900	75⅝	69	75½	Amerada Corp.	788,675	N.P.	50cQ	7-30-38	$2.00	114⅞	51½	125½	75
25⅝	17¾	16,700	25⅝	23⅝	25½	Atlantic Refining	2,663,999	$25	25cQ	6-15-38	1.00	37	18	35⅛	26⅝
21¾	12⅛	16,100	21¾	18½	21	Barber Co.	390,223	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
17¾	10⅛	52,900	17¾	15	17¾	Barnsdall Oil Co.	2,250,344	$5	25cQ	8-1-38	1.00	35¼	10	28¼	14⅛
10½	7	64,200	10¼	9⅜	10¼	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	8-15-38	.90	17⅜	7	17¼	11½
34⅜	21¼	39,700	33	30¼	32¾	Continental Oil of Delaware	4,682,583	$5	25cQ	6-30-38	1.50	49	24	44⅞	28⅛
8⅞	5	64,300	8⅞	7¾	8⅞	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅝
22⅝	12¼	11,200	19⅝	17⅝	19⅜	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	1.50	35⅝	14	30⅞	17¼
17¾	10⅝	2,900	17	15	17	Mission Corporation	1,382,945	$10	$1	6-29-38	1.25	34	15	29⅞	16¾
23	14⅛	25,100	21	19	20⅝	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	9	37,300	12	10⅞	11⅞	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.00	22⅞	8	18	12¼
15⅞	10¼	2,200	14	12	14	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11¾
9¼	7	No sales	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1 •	12-21-37	1.00	17⅛	7	20⅝	12¼
43	27¼	36,300	43	39	43	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-38	2.75	64	30⅛	52⅜	33⅛
21⅞	15	12,300	21⅞	20	21⅞	Plymouth Oil Co.	1,029,800	$5	35cQ	3-31-38	1.65	29⅞	13	27⅜	11⅞
13½	8¼	80,900	12⅜	10⅞	12⅜	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
7⅛	5	19,500	6¾	6	6¾	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	15½	18,600	24⅞	21⅞	23⅝	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-38	1.00	54⅛	16	44	30½
18¼	10	15,300	16¾	14¾	16¾	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	1.00	34¾	14⅞	28¼	14¾
34⅜	18½	15,200	31⅝	26¼	31⅝	Skelly Oil	1,003,949	$15	50c	6-25-38	1.50	60⅝	26½	47⅝	19½
16⅜	10⅜	70,700	15½	14¼	15⅜	Socony-Vacuum	31,151,071	$15	25c	3-15-38	.80	23¼	13	17½	12⅛
33⅞	25⅛	35,700	32	29⅝	31⅞	Standard Oil of California	13,014,754	N.P.	35cQ†	6-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	21,700	33½	31¼	33⅜	Standard Oil (Indiana)	15,267,030	$25	25cQ	6-15-38	2.30	50	26½	48½	32¾
35½	..	No sales	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
56	39¾	61,700	56	51½	55¾	Standard Oil of New Jersey	26,224,767	$25	$1SA†	6-15-38	2.50	76	42	70⅜	51⅛
57⅞	45	800	57	54	57	Sun Oil	2,316,484	N.P.	25cQ	6-15-38	$1 & 8% Stk.	77½	44½	91	70
3⅝	1⅜	27,600	3¼	2½	3¼	Superior Oil Corp.	1,388,079	$1	....	....	....	7¾	1½	6¾	3
45⅜	32⅝	59,100	45⅜	42½	45⅜	Texas Corp.	10,875,006	$25	50cQ	7-1-38	2.25	65⅛	34¾	55¼	28⅞
4⅞	2⅝	20,300	4⅜	3¾	4¼	Texas Gulf Producing Co.	888,136	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
11	7	25,500	11	9¾	10⅝	Texas Pacific Coal & Oil	888,237	$10	10c	6-1-38	.40	16⅝	5⅜	15¼	7½
15½	10⅛	24,600	15¼	13⅝	15¼	Tide Water Associated	6,369,175	$10	25cQ	6-1-38	1.20	21⅝	13⅛	21⅜	14¾
21⅝	17⅛	9,500	21½	19¾	21½	Union Oil of California	4,666,270	$25	30cQ	5-10-38	1.40	28¼	17½	28½	20¾
23½	20	700	21	20⅞	21	Union Tank Car Co.	1,200,000	N.P.	30cQ	6-1-38	1.60	31½	22	31⅝	22⅝
3⅛	1⅝	3,600	3⅛	2¼	2⅞	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	6¼	1⅜	5¼	2⅜

•Payable in 4⅛% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending July 2 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
9⅝	5	9,600	9⅜	7⅛	9⅛	American Republics Corp.	1,308,049	$10	30c	12-27-37	$0.40	10	6⅝	..	..
10¼	5⅛	7,100	7¼	6⅜	7	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	31¾	350	33	31¾	33	Buckeye Pipe Line Co.	200,000	$50	50cQ	6-15-38	3.75	51½	36	50	39¾
110	97	50	109	109	109	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-27-38	7.00	123	95½	124¾	105
11	7¾	6,300	10½	9⅛	10⅜	Cities Service (new)	3,714,317	$10	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	⅞	4,400	1⅜	1⅛	1¼	Cosden Petroleum	462,551	$1	....	.....	....	5½	1½	4½	1½
27½	17½	8,800	23¼	21⅜	23⅛	Creole Petroleum	6,975,383	$5	50cSA†	6 10-38	1.00	38¾	20¼	39	19⅞
9	5½	1,000	9	7¼	9	Darby Petroleum	351,390	$5	25cSA	7-15-38	.50	18⅝	6½	18⅛	9
3½	2	1,400	3	2⅝	2¾	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6¾	1⅞
31	22⅝	100	23	22	22	Eureka Pipe Line	50,000	$50	50c	8-1-38	4.00	47½	24½	47½	38½
42⅞	33	12,400	43⅝	40½	43⅜	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-38	1.00	63½	33	59	36
70	56	8,000	69⅞	66¼	69¾	Humble Oil & Refining	8,987,840	N.P.	37½c	7-1-38	2.00	87	54⅞	80	57
19½	15	4,900	17⅜	16⅝	17⅛	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	1.25	24¼	14½	24½	19⅜
8¼	6⅝	500	7⅞	7⅜	7⅞	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9¾	5½
31¼	23	9,900	26	24⅝	25⅝	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	2.50	39½	23½	39⅝	32⅝
5	3	1,200	4	3⅝	4	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8¾	2⅜	5¾	2⅝
25⅛	15⅝	8,700	24	21¾	24	Lion Oil Refining	434,820	N.P.	25cQ	4-20-38	1.50	34	12½	17¾	7⅜
9¼	6⅝	6,500	9¼	8	9¼	Lone Star Gas	5,533,747	N.P.	20c	4-20-38	.60	14¼	5¼	14¼	9⅞
9⅜	6½	12,900	8⅝	7¼	8½	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	6-15-38	.50	15¼	6⅜	15⅜	9⅞
8½	6⅜	800	7⅞	7½	7⅞	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5⅝	4½	1,800	5½	5⅛	5½	Mountain Producers	1,593,584	$10	30cSA	6-15-38	.60	7⅞	4½	8⅜	5
14⅝	12¼	2,500	13½	13	13⅛	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-38	1.00	19½	12	23	17⅜
9¼	7¼	500	8½	8¼	8¼	National Transit	509,000	$12.50	35cSA	6-15-38	1.00	12½	7¼	15⅜	9¼
2⅝	1½	600	1¾	1⅝	1¾	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅜	3⅞	6¼	4¼
6	4	100	6	6	6	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12¾	5¾	9¾	4⅞
7⅜	3¾	21,100	5⅛	4¾	5	Pantepec Oil	2,441,142	$1	....	.....	....	9⅝	2¾	10⅛	3¼
3½	1⅝	800	2⅞	2⅝	2⅞	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2½	5	3	2¾	3	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	100	4½	4½	4½	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
30	28¾	1,800	36¼	35⅛	36	South Penn Oil	1,000,000	$25	50cQ†	6-30-38	3.65	56	35	44	32½
22¼	19	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-38	2.00	42	20	60	44
18	15	2,700	18¾	17⅛	18¾	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-38	1.50	21⅛	14¾	23⅜	17⅛
7½	6⅛	300	7	6¾	7	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	16¼	4,300	22¾	20	21	Standard Oil of Ohio	753,740	$25	25c	6-15-38	1.50	45	16	40	21⅜
3¼	2⅛	3,600	3	3	3	Sunray Oil	2,006,176	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
4⅜	3½	800	4½	4¼	4½	Texon Oil & Land	936,024	$2	15cQ	6-30-38	.45	7⅝	2	9⅜	5⅜
7⅜	4¼	3,200	6¼	5½	5⅞	Transwestern Oil Co.	750,000	$10	....	.....	....	13⅞	4⅝	..	..
5¼	2⅜	37,600	4⅝	3⅞	4½	United Gas Corp.	7,818,959	$1	....	.....	....	13⅜	3	10⅝	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

CHESTER RUSE, drilling superintendent for the Standard Oil Company of California, at Kettleman Hills, has left his Avenal office for a two weeks' vacation during which he will visit various Pacific Coast points.

C. R. DOOLEY, manager of industrial relations for the Socony-Vacuum Oil Company, New York, is chairman of the committee on arrangements for the twenty-first annual Silver Bay Industrial Conference to be held at Silver Bay on Lake George, N. Y., August 31 to September 1. MILTON C. HAGEN, of the Standard Oil Company of New Jersey's Bayonne refinery, is to present a discussion on "Layoff Plans, Seniority, Dismissal Compensation, etc.," and L. A. APPLEY, Socony-Vacuum, N. Y., will speak on "The Foreman as an Interpreter of Company Policy and Economic Fact."

FAYNE LOCKHART, assistant secretary of the South Central Drilling Company, Houston, Tex., is taking a month's vacation and will visit his former home in Bakersfield, Calif. During his absence his duties will be performed by JOHN RUDOLPH, accountant for the Taft Well Drilling Company, of Bakersfield. Mr. Rudolph formerly resided in Houston.

R. A. CATTELL, chief engineer of the petroleum and natural gas division in the U. S. Bureau of Mines, has returned to Washington after an extended trip during which he visited the bureau's petroleum experiment station, Bartlesville, Okla.; helium plant and cryogenic laboratory, Amarillo, Tex.; the petroleum field office, Dallas, Tex., and oil-producing regions of West Texas, southeastern New Mexico and the Gulf Coast.

WAYNE A. CAMERON, Wichita, Kans., operator, has joined the organization of Bunte Brothers, Wichita.

RICHARD L. SAUNDERS, New York, has been appointed secretary of the Texas Corporation to succeed the late E. M. Crone. Since 1935 Mr. Saunders has been assistant general sales manager, and before that he was manager of the northern territory of the sales department. He has been in the service of the Texas Corporation since 1909.

W. H. STUEVE has been appointed by Governor Marland, of Oklahoma, to serve a five-year term as a member of the State Board of Registration for Professional Engineers. This appointment followed the unanimous endorsement of the Oklahoma Society of Professional Engineers and the Tulsa Engineering Society. Mr. Stueve, who is connected with the mechanical and electrical and petroleum engineering groups throughout the state, is in charge of oil-field electrification for the Oklahoma Gas & Electric Company.

W. A. MONCRIEF, East Texas operator, has left for a vacation in California. He plans to remain there until September.

DON TEIS, formerly in the division engineering office with the Phillips Petroleum Company in Oklahoma City, has been transferred to the Vernon, Tex., district as district engineer.

EMILE HUGUENIN, deputy supervisor of the California State Division of Oil and Gas in the southern district, made a recent trip to Palo Alto, where his son, WILLIAM HUGUENIN, graduated from Stanford University in chemical engineering.

W. L. BUAAS, president of Taft Well Drilling Company, has returned to Bakersfield, Calif., after making a trip to Annapolis to witness the graduation of his son, MARION BUAAS, from the U. S. Naval Academy. Marion Buaas captained the Navy 1937 football team.

W. C. LANGLEY, engineer in charge of standardization work for the Standard Oil Company of Venezuela (New Jersey), in Carapito, Venezuela, is in the states on his three months' vacation. After visiting friends in the Texas Panhandle, Mr. Langley is now in Pensacola, Fla.

SIDNEY S. SMITH, formerly head of the natural gasoline department of the Shell Petroleum Corporation in Tulsa, has been made general superintendent of the company's new gasoline pipe line from Wood River, Ill., to Indianapolis, Ind. The new pipe line has brought promotions to four other members of the Shell force: M. E. OVERMAN to chief dispatcher, J. H. HALL to chief electrical engineer, R. F. BALLMAN to chief accountant, and W. H. SHELLEY to field superintendent.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Pierce Oil Corporation, organized and chartered under the laws of West Virginia, will absorb all Waters Pierce company properties and will operate in Oklahoma. The new capital is $31,000,000 of which $10,000,000 has been paid in.

George F. Getty, president of the Minnehoma Oil Corporation operating in Oklahoma, points with pride to the fact that of the most recent 60 wells drilled by Minnehoma only four have been dry.

Kansas and Oklahoma crude has been advanced 5 cents, or to 98 cents per barrel for all grades. Caddo light crude was raised to $1, the only dollar oil west of the Mississippi River.

20 YEARS AGO

Federal Oil Inspection Board of the Department of the Interior has ruled that wages in California shall be $8 per day for cable tool drillers, $5 per day for tool dressers and $8 per day for rotary drillers; $6 for bit dressers and $5 for derrick men. Minimum wage for any kind of oil field work is to be $4 per day and the working day consists of eight hours. Dormitory or bunk house lodging shall be free to workers and not more than $1 per day per man shall be charged for board.

James Cummiskey, widely known tool maker, for many years with the Oil Well Supply Company dies in Bradford, Pa.

10 YEARS AGO

On June 30, or less than two years after Wilcox sand production was found in the Seminole area, the big field had produced 198,726,251 barrels of oil as follows: Seminole City 65,032,430 barrels; Earlsboro, 54,515,245 barrels; Bowlegs, 52,918,216 barrels; Searight, 13,828,292 barrels; Little River, 12,412,425 barrels, and Maud, 19,643 barrels.

J. C. Durnell, 78, dies in Bolivar, N. Y. He drilled wells in Oklahoma up to his seventy-seventh year and was among the first wire-line drillers.

FRANK WOLFE, drilling contractor and producer of Wichita Falls, Tex., has been in Coffeyville, Kans., this week. He has oil leases in that district.

FRANK LOVERING, district engineer for the Phillips Petroleum Company, has been transferred from the Shreveport office to Rodessa, where he has assumed the duties of farm boss.

OWEN WOOD, field geologist for the Atlantic Refining Company at Corpus Christi, Tex., has been promoted to district geologist for that district. He succeeds OSCAR WALTON, transferred to the Dallas office.

DANA HOGAN, president of the Hogan Petroleum Company, has been named chairman of the naval affairs committee of the Los Angeles Chamber of Commerce, which fosters closer cooperation between southern California civic interests and the United States Navy.

BONNEAU PETERS, chief scout for the Standard Oil Company of Louisiana, Shreveport, is leaving this week on a two weeks' vacation trip to Yellowstone Park, accompanied by his family and his brother, L. C. PETERS, district superintendent for the Humble Oil & Refining Company in the London, East Texas, field.

A. J. MURPHY, Tulsa, treasurer of the Warren Petroleum Company, with MRS. MURPHY and their four children, MARGARET, ARTHUR, FRANCIS, and MARIAN, left by motor car for Hyannis, Mass., on Cape Cod. There they planned to visit Mr. Murphy's mother and then go on to other New England points, including Boston and New Bedford, Mass., and Providence, R. I. They will take in Washington, D. C., on their way back home.

PARAGRAPHS

JAMES H. BOTKIN has been appointed comptroller of the Pure Oil Company. Mr. Botkin, who has been with Pure Oil 18 years, succeeds the late Arthur M. Brereton. Mr. Botkin's first work with the company was as an auditor in the Columbus, Ohio, offices. In 1926 he became a divisional accountant in the Chicago office. His next promotion was to assistant comptroller in charge of accounting for the producing, pipe line, and crude oil purchasing departments.

L. A. DAY, assistant manager of the Minot, N. D., division of the Standard Oil Company of Indiana, was transferred July 1 to the same position in Davenport, Iowa, where he was formerly office manager. He succeeds R. E. McLellan, who died June 9. Mr. Day joined Standard Oil in 1920 as a clerk in the former Dubuque, Iowa, division, and served as station examiner in Des Moines, Iowa; assistant office manager in Wichita, Kans., and then as office manager in Davenport, Duluth, Minn., and Milwaukee, Wis., before he was promoted to assistant manager in Minot.

REUBEN P. RESOR, treasurer of Standard Oil Company (New Jersey), now in his fiftieth year of continuous service, will retire on August 10. Mr. Resor, accompanied by his family, was honored recently by fellow workers at an informal party held in the offices of the treasurer's department at 30 Rockefeller Plaza, New York. He was given a handsome gold watch and a leather-bound book containing the signatures of all members of his staff. W. S. FARISH, president, described Mr. Resor's record as a "real job uniquely and beautifully carried out." Other company officials present included T. C. McCOBB and R. W. GALLAGHER, directors; H. L. HAGUE, general manager of the marine department; GUY WELLMAN, general counsel, and G. W. ABRAMS, president of the Standard Oil Company of New Jersey. Mr. Resor was born August 10, 1873.

SIDNEY M. WITT, formerly with the British American Oil Producing Company, has joined the Sunray Oil Company organization as auditor. Mr. Witt was associated with the British American and its affiliates 14 years as general auditor, and before that he was with W. O. Ligon & Company.

C. L. GLADDEN and HARRY J. MORLANG, of Dallas, Tex., vice presidents of the Magnolia Petroleum Company, have been elected directors of the Oil World Exposition to be held in Houston, Tex., April 24 to 29, 1939. Other oil men named directors are L. H. PRICHARD, president of the Anderson-Prichard Oil Corporation, Oklahoma City; J. A. VICKERS, president Vickers Petroleum Company; A. S. RITCHIE, president McPherson Drilling Company, and A. L. DERBY, president Derby Oil & Refining Co., all of Wichita, Kans.

W. B. OSBORN, Ada, Okla., independent, has moved his office to San Antonio, Tex.

W. K. ROSS, of the Standard Oil Company of Kentucky, has returned to Louisville, Ky., after a trip through the Southwest.

DR. F. D. L. PATTON, Austin, Tex., senior engineer with the Texas Railroad Commission, and MISS FRANCES MARCHBANKS, Austin, were married recently.

LEWELL ADAIR, production engineer for the Atlantic Refining Company at Scott City, Kans., has been transferred to the Great Bend production office.

W. K. LINK, Shreveport, La., geologist in charge of the exploration department of the Standard Oil Company of Louisiana, is telling folks about a new 7½-pound son, DAVID ANDREW LINK.

R. D. McCLARAN, Texas manager of pipe lines for the Pure Oil Company, returned to his Beaumont, Tex., offices this week after a business trip to Muskogee, Okla., and North Texas points.

TOM LEE CROWELL has been transferred from the natural gasoline department of the Phillips Petroleum Company in Borger, Tex., to the department of economics in the home office in Bartlesville, Okla.

LYNN STORM, petroleum engineer for the Texas Railroad Commission in the Gulf Coast division at Houston, has resigned to become associated with the Canal Oil Company in New Orleans, La. HEATH RENFRO, petroleum engineer for the commission in the K.M.A. field, will be transferred to the Houston office to replace Mr. Storm.

Shell's Chief Geologist

Dr. Frank S. Hudson, recently appointed chief geologist of the Shell Oil Company, with offices in Los Angeles, Calif., started out as an assistant geologist for the Southern Pacific Company right after graduating from the University of California in 1912 with a B.S. in mining and engineering. Two years later he joined the Standard Oil Company of New York and served till 1916 in Socony's foreign office in China. Then he opened an office in Los Angeles as a consulting geologist and appraisal engineer. In 1920 he joined the Ventura Consolidated Oil Fields Company as geologist, later becoming field manager. His association with Shell began in 1926, first as geologist and then as engineer. In 1937 he moved back into the geological department, where he was serving when advanced to the position of chief geologist, succeeding Angus McLeod, who had resigned to enter consulting work.

DR. F. S. HUDSON

Doctor Hudson is a member of the Faculty Club in Berkeley, Calif.; University Club, Los Angeles; American Institute of Mining Engineers; American Association of Petroleum Geologists, and Sigma Xi fraternity. He is a teaching fellow in geology at the University of California, Berkeley. He was born in Marysville, Calif., and prepared for college at high school in Berkeley. With his wife and daughter he resides in Los Angeles. The Ph.D. degree was conferred on him by the University of California in 1920.

FRED GRISWALD, formerly an engineer in the Phillips Petroleum Company's Breckenridge, Tex., office, has been transferred to the Amarillo district office as assistant engineer.

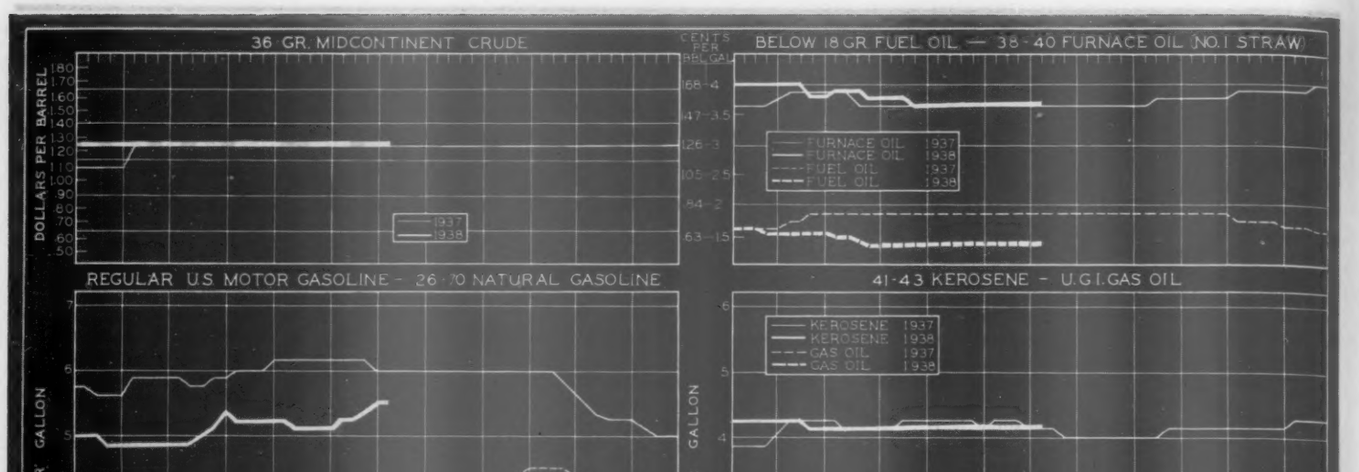
W. H. CORREA, Socony-Vacuum Oil Company, New York, has been appointed chairman of the American Petroleum Institute's committee on lubricating oil. L. C. WELCH, Standard Oil Company (Indiana), Chicago, is vice chairman.

HARVEY HARDISON, formerly superintendent of production for the Standard Oil Company of Texas, with headquarters in Midland, has been transferred to the company's main office in Dallas, where he will serve as chief engineer.

G. C. SCHOONMAKER and B. E. SCHOONMAKER will represent the Dearborn Oil Company in its new offices recently opened in Fort Worth, Tex. The company, composed of men and capital from Detroit, Mich., will center its activities in the North Texas district.

R. J. KENMUIR, who before joining the Union Oil Company of Canada was secretary of British Columbia Refining Company, has been elected a director of Union and at the meeting of the board of directors was made vice president. He is a resident of Vancouver and will maintain headquarters at that point.

HAROLD J. KINNEY, attorney, for three years engaged in legal work connected with the Houdry cracking process, and before that in the patent department of the Atlantic Refining Company, has become associated with the law firm, Carpenter, Abbott & Coulter, Chicago and St. Paul. Mr. Kinney, whose office was in the headquarters of the Sun Oil Company, Philadelphia, has moved to St. Paul.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline Holding Strength in Group 3 With Natural Starting to Go Higher

By T. F. SMILEY

Market conditions in the Group 3 territory continued this week to hearten refiners. Gasoline was increasingly firm, with evidence that further advances in tankcar prices might not be far away. The naturals were distinctly stronger. Heating oils were in smart demand, with some grades reported scarce. Sales managers were inclined to be a wee bit more hopeful about the lubricants, though they kept their fingers crossed.

It became evident late last week that here and there was a refiner who had been holding back gasoline with a view of getting a better price for it. When the triple-holiday business subsided without having sent tankcar quotations higher some of these refiners began to look for outlets. The sharp edge already had been taken off demand, and the offerings had the momentary effect of slightly dulling the market. Nothing resembling distress material appeared, however, and when offices reopened this week, following the Independence Day celebration, orders from jobbers to replenish their depleted stocks were reported to be coming along in encouraging volume.

Satisfactory Gallonage Indicated

It is a tradition of the marketing division that tourist consumption of gasoline does not reach its real summer stride till after Independence Day, and indications point to satisfactory gallonage records from now until after Labor Day. Notwithstanding rain and cool weather in northern areas have tended to discourage pleasure driving in recent weeks, excellent June business is reported, with sales in small towns and rural communities compensating for slowness in the cities, where the effects of unemployment are more plainly seen.

Refined Oil Market Barometer

Gasoline is entering the touring season at a vigorous stride. Reports indicate the triple-holiday consumption was up to expectations, and feeling seems general that big gallonage records will be made this summer. Active buying of heating oils for storage is under way, with some grades scarce. Natural gasoline is believed headed definitely upward. Industrial gas oil in demand.

MID-CONTINENT. Gasoline firm. Heating oils stronger. Naturals rising. Lubricants weak.

EAST COAST. Gasoline goes higher. Light fuel oils weak. Kerosene off. Heavy fuels weak.

GULF COAST. Gasoline and fuel oils stronger. Prices firm.

CALIFORNIA. Gasoline picking up. Fuel oil and diesels weak. Prices unchanged.

PENNSYLVANIA. Gasoline softened by influx of Michigan product. Lubricants weak.

CHICAGO. Gasoline strong. Kerosene and tractor fuels active. Domestic fuels steadier.

A flurry of buying raised the price of natural gasoline an eighth in Oklahoma and added a quarter cent to the price for the Texas product. Most of the buying was on the part of jobbers, who, sure a price advance was in the offing, wanted to stock up to the extent of their storage capacity while the lower prices still ruled. Refiners too have been buying in modest volume. As gasoline long held in storage is being drawn upon, much of it is "pepped up" by addition of natural. Buying for fall blending should be well started before the end of the current month, and that is expected to carry the market along. The naturals are definitely on the upgrade according to men in the trade.

Heating oils were gaining vigor. There was especially strong demand for the No. 2 grade, both straw- and dark-colored. No. 2 was the strongest member of the group, and jobbers who want to store it for fall and winter business are having difficulty in uncovering supplies.

Kerosene was holding well, but the situation with respect to this product appeared to be somewhat mixed. While refiners in certain areas were reported to be getting a small fraction more than the ruling prices, inventories in other districts were said to be moving rather slowly. With harvesting operations well under way, the demand for tractor fuels was active.

Industrial Gas Oil Strong

Industrial gas oil added to the strength it was showing last week. Relatively few refiners are making this product, and for such as is available there is brisk demand for use as cracking stock, along with that coming from manufacturers of artificial gas. Refiners say that so long as ordinary gas oil can be bought at a low price it is more profitable to make gasoline from it by cracking than it is to make straightrun gasoline from crude.

Neutrals and bright stocks were believed by some refiners to be in faintly better position, though it was apparent that inventories were still excessive. Refiners have ceased to look for much improvement in the lubricating group until September, when, according to the pattern established in other years, export demand should begin. Wax was firm at current quotations.

Northeastern Gasoline Markets Start July With Another Rally

By H. STANLEY NORMAN

NEW YORK, July 5.—The northeastern tankcar gasoline market was in the midst of another rally at the start of July. The fact that advances of a quarter of a cent per gallon were gaining momentum daily indicated to observers that the move to higher ground is well supported and that little danger of a reaction exists for the duration of the summer.

Tank-wagon adjustments are being made more cautiously, but upstate New York, Connecticut and other scattered New England points were raised. Retail conditions in New York state are somewhat unsettled, particularly within a radius of 25 or 50 miles from the metropolitan area. Frequent but brief price wars have flared up in Westchester, Putnam, Queens, Brooklyn, Manhattan, Bronx and Staten Island during the past two weeks. Several representative dealers including the ranks of independents have raised their open market spot quotations on 65-octane gasoline to 7 cents per gallon and others announced intention of following the advance.

The larger marketers, headed by Socony-Vacuum Oil Co. and including Gulf and other similar companies, have elevated their New York tankcar price on branded regular motor fuel a quarter of a cent per gallon during the past few days and are now quoting 7½ cents for this class of material. Most companies, at least those offering 65-octane, unleaded gasoline, are asking 7¼ cents, but the range of spot quotations is currently from 6¾ to 7 cents with the majority gradually swinging to the higher figure.

It is becoming more difficult to obtain high-octane gasoline on the Gulf Coast, and this development is reflected in the New York market. Too, the summer's record reduction in gasoline stocks reported for the week ended June 25 and expected to be duplicated or surpassed for that ended July 2, has stimulated optimism over the motor fuel market. Jobbers ordered briskly against contracts throughout the past week preparing their tanks for the triple holiday week-end. Activity from contract customers and in the open market gave every assurance that consumption records for July 4 will be shattered when final reports are available.

The ground gained by motor fuel, however, did not compensate for that relinquished under pressure in the light fuel oil market. Tankcar prices for kerosene and range oil were reduced as much as five-eighths of a cent per gallon in New York by Standard Oil Co. of New Jersey and practically all other fuel oils were lowered at least a quarter of a cent. The Standard of New Jersey lowered No. 1 fuel oil (Essoheat Light) and No. 1 range oil five-eighths of a cent making the New York tankcar price 4⅝ cents currently. All other grades of light and No. 4 fuel oil as well as distillate fuel, gas oil, and shore plant diesel fuel were reduced to 4 cents per gallon. Prices of one-eighth of a cent less apply when sold in barges to resellers.

The Bunker C fuel oil market is holding steady at the reduced prices of two weeks ago, but cutting on similar grades of fuel for industrial and semi-industrial consumption continues among the shore plant operators. Heavy fuel remained weak on the Gulf Coast despite the reduction in Bunker C by 5 cents per barrel.

Gas oil was slightly more active on the Gulf Coast last week with two cargoes reported sold. One cargo of 70,000 bbls. of 48 diesel index gas oil was sold for July loading at 3½ cents per gallon, but this price was considered the bottom and its duplication was believed impossible at the moment. Another cargo of lower diesel index was reported sold at 3⅜ cents and this figure was also considered the low of the market.

The gas oil market range is now considered from 3½ to 3⅞ cents per gallon on the Gulf Coast. Kerosene is dull on the Gulf Coast, but prices are generally unchanged from the preceding week ranging from 3⅞ to 4½ cents per gallon, depending on the quality and source of supply.

The interrefinery demand for fuel oil to be used as cracking stock was reported holding up well in western Pennsylvania despite a slight reaction indicated in the gasoline market resulting from competitive material entering the trade from Michigan. Most Pennsylvania suppliers are reported asking 3⅝ cents per gallon for fuel oil cracking stock, but a few with more abundant stocks are willing to sell at 3½ cents. The Pennsylvania lubricating oil market is unchanged from the preceding week with prices still touching bottom at most points in the list. There was a little improvement in the interrefinery demand, but sales to jobbers were slow. Bright stocks were slightly improved in tone, but the market is unchanged, according to a majority of traders.

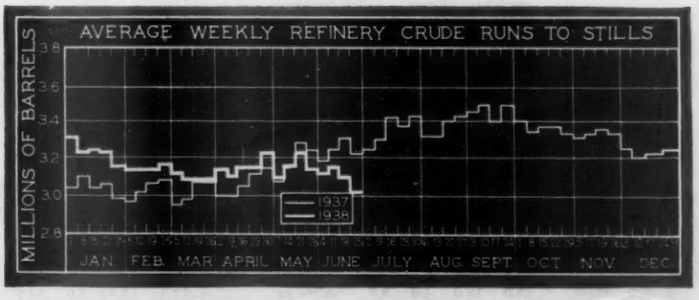
Curtailed operations, or complete shutdown of lubricating oil plants in keeping with the markets for these products, has contributed to a general tightening of the wax market both at inland and seaboard points. Despite the curtailment of operations white scale of 124-126 a.m.p. is offered at 2.15 to 2¼ cents per pound. At the prevailing figure, however, the wax market is up about a quarter of a cent from the first of June and may push into higher ground if the dullness around lubricants persists for another month.

Jobbers are not anticipating material change in their lubricating oil requirements, which is a reflection of activity in general industrial lines. Furthermore, lubricating oils are one of the few classes of petroleum products purchased by foreign customers in reduced quantities so far this year as compared to 1937. Reduced export demand undoubtedly has played an important part in the current position of the lubricating oil market. The one weak link in the northeastern gasoline market is centralized in New York and

(Continued on Page 112)

A. P. I. Weekly Refinery Statistics

REFINERY FIGURES FOR THE WEEK ENDED JULY 2 NOT AVAILABLE DUE TO INDEPENDENCE DAY HOLIDAY



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending June 18, 1938	295,931,000 barrels
Week ending June 11, 1938	297,197,000 barrels
Week ending June 19, 1937	307,465,000 barrels

Figures for June 11 and June 4 do not include stocks of heavy, unrefinable California crude which were 17,309,000 bbls. and 17,295,000 bbls., respectively. Figures on heavy crude for year ago not available.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of July 5, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Inc. tax	Kero. tank wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡10.3
Mason City	15.8	14.3	4.0	‡10.7
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	11.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	15.3	13.8	4.0	9.0
Grand Rapids	14.8	13.8	4.0	9.7
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†11.2
South Bend	17.6	16.1	5.0	†11.5
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	9.8
St. Louis*	15.2	13.7	4.0	10.1
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	11.6	4.0	7.8

***State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.**

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over 7 cents; Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	13.4	11.4	4.0	8.0
Newark	13.4	11.4	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.1
Hickory	19.15	16.65	7.0	12.5
Mt Airy	18.95	16.45	7.0	12.3
Raleigh	18.25	15.75	7.0	11.6
Salisbury	18.75	16.25	7.0	12.2
Charleston, S. C.	17.25	14.75	7.0	10.6
Columbia	18.25	15.75	7.0	11.6
Spartanburg	18.95	16.45	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Gasoline Net dlr.	Inc. tax	Kero. tank-wag
Atlanta, Ga.	20.0	17.0	7.0	*12.0
Augusta	21.0	18.5	7.0	11.5
Macon	21.0	18.5	7.0	12.0
Savannah	20.0	17.0	7.0	*12.0
Birm'ham, Ala.	21.5	18.5	8.0	12.0
Mobile	22.0	19.0	9.0	11.0
Montgomery	21.5	19.5	9.0	13.0
Jackson, Miss.	20.0	17.0	7.0	10.0
Vicksburg	20.0	17.0	7.0	10.0
Jacks'ville, Fla.	20.5	17.5	8.0	8.0
Miami	21.0	18.0	8.0	11.0
Pensacola	22.5	19.5	9.0	12.0
Tampa	20.0	17.0	8.0	10.5
Lexington, Ky.	20.0	17.0	6.0	10.5
Covington	18.0	15.0	6.0	10.5
Louisville	19.0	16.0	6.0	10.0
Paducah	19.5	16.5	6.0	10.0

*Includes 1-cent state tax.

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Denver, Colo.	14.0	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Butte, Mont.	19.5	6.0	15.5
Billings	19.5	6.0	13.0
Helena	20.0	6.0	15.5
Great Falls	19.0	6.0	15.5
Salt Lake City, Utah	18.0	5.0	16.0
Twin Falls, Ida.	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Dlvided dlr.	Inc. tax	Kero tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC

	Gasoline Tank-wag.	Gasoline Tank-car	Inc. tax	Kero tank wag.
Albany, N. Y	14.5	12.5	5.0	9.0
*Met. N. Y.:				
M'htt'n, Br'nx	14.0	12.5	5.0	8.75
Staten Island	14.0	12.5	5.0	8.75
Q'ns & Bklyn.	14.0	12.5	5.0	8.75
Buffalo	14.0	13.0	5.0	7.5
Rochester	15.0	13.2	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.0	12.0	4.0	8.5
Portland, Me.	15.0	13.0	5.0	8.75
Manch'ter, N.H.	15.0	13.6	5.0	9.0
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nav.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Inc. tax	Kero. tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	18.7	16.5	6.0	10.5
Norfolk	18.4	16.9	6.0	11.2
North Platte	18.8	17.3	6.0	11.6
Scotts Bluff	19.5	18.0	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.0	16.5	*10.0	†12.0
Baton Rouge	17.0	14.5	8.0	12.0
Alexandria	17.5	15.0	8.0	10.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	18.0	15.5	8.0	12.5
Shreveport	16.5	14.0	8.0	9.5
Kn'xv'lle, Tenn.	20.0	17.5	8.0	14.0
Memphis	18.0	15.5	8.0	12.0
Chattanooga	19.5	17.0	8.0	13.5
Nashville	19.0	16.5	8.0	10.5
Bristol	19.0	17.75	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Inc. tax	Kero tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'd, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	8.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Inc. tax	Kero. tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

***Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.**

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	15.0
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) June 29 advanced tank-wagon kerosene 1.5 cents at Des Moines, 1 cent at Green Bay, 2.1 cents at South Bend and St. Louis, and 1.3 cents at Kansas City.

Continental Oil Co. June 19 reduced tank-wagon kerosene .5 cent at Texarkana.

New York Market

(Continued from Page 111)

spreads to a radius of about 100 miles on the east side of the Hudson River. In this territory gasoline prices are disturbed with the Manhattan stations offering 6 gallons of unleaded gasoline for 98 cents.

Conditions in New Jersey are apparently reasonably well stabilized under provisions of the state's fair trade practice laws. Practically all oil companies are now operating under provisions of the law which permits the suppliers to dictate retail resale prices to their dealers.

B. E. Parsons, for years assistant to W. L. McLaine, vice president of the General Petroleum Corp. of California, has been elected vice president, director, and manager of the production department. Mr. McLaine retired from active service June 1.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of July 5, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05½	.05⅝
60-62 400 grades:		
62 oct. and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05½	.05⅝
64-66 375	.04⅞	.05
68-70 360	.05⅛	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05½	.05⅝
60-62 400	.04¾	.04⅞
64-66 375	.04⅞	.05

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below		.04⅝
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)		.05⅝

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below		.04⅜
67-69 octane		.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05½	.05⅝
60-62 400 grades:		
62 octane and below	.04¾	.04⅞
63-66 octane	.05	.05⅛
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05½	.05⅝
64-66 375	.04¾	.05
68-70 360	.05	.05⅛

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05⅛
65 octane	.06½	.06⅝
68-70 octane	.07	.07⅛

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¾	.08⅛
58-60 400, 65 oct. and higher	.07¾	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06⅛	.06½
Philadelphia	.06¾	.06½
Boston	.06½	.06⅝
Baltimore	.06½	.06⅝
Charleston, S. C.	.07	.07⅛
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06¾	.07
Philadelphia	.06¾	.07
Boston	.06¾	.07
Baltimore	.06¾	.07⅛
Charleston, S. C.	.07⅛	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05½
60-64.9	.05½	.05¾
65 octane and higher	.05⅝	.05½
68-70	.05¾	.06

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¾	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02⅝
Grade 18-55		.02¾

NORTH TEXAS—

Grade 26-70		.02⅛
Grade 18-55	.02⅝	.02¾

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.02⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110 flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-520 l.b.p., 110-125 flash, 500-520 e.p.	.04	.04⅛
46-48 gr., 210-230 l.b.p., 480 max., e.p.	.04⅜	.04½

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅜	.04⅝

PENNSYLVANIA (Inland refineries)—

45		.05
46		.05⅛
47		.05¼

CHICAGO (Based on Group 3)—

41-43	.04¼	.04⅜
42-44	.04½	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03⅜	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15-28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.55	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.55	.60

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (Inland refineries)—

36-40	.03½	.04

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.20	1.40
24 plus diesel, per bbl.	1.15	1.40
24 plus diesel (bunkers)	1.25	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.65	.83
12-17 (tankcars)	.60	.90
10-17 (high sulfur)	.50	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus diesel, per bbl.	1.25	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.50	1.55
10-16 (bunkers)		.95

GULF COAST—

No. 2 fuel		.03½
43-47 diesel		.03½
48-52 diesel	.03½	.03⅝
53-57 diesel	.03⅝	.03¾
Bunkers (bulk cargoes)		.70
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 diesel (lighterage 6¼c per bbl.)		1.75
48-52 diesel (tankers)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. harbor)		.95
Industrial fuel (tankcars)	.04	.04¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14½	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		12½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.15	.15½
15 pour test	.14	.14½
20 pour test	.13	.13½
25 pour test	.12	.12½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.13
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08⅝
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09⅝
1,500-4	.09⅝	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¾	.07½
500-5-6	.08	.08½
750	.08⅝	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pour test	.13½	.14
10 pour test	.12½	.13
15 pour test	.12	.12½
25 pour test	.11	.11½
180 vis. at 70° F., 3 color:		
25 pour test	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pour test	.14½	.15
10 pour test	.13½	.14
15 pour test	.13	.13½
25 pour test	.12	.12½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (Inland refineries)—

122-124 (a.m.p.) w.c. scale	.0210	.0220
124-126 (a.m.p.) w.c. scale	.0210	.0220

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.		.0185
124-126 (a.m.p.) y.s.		0185
Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05
60-62 400	.05	.05⅛
61-63 390	.05⅛	.05¼
64-66 375		.05½

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¼	.05½
65-69 octane		.05¾
Above 69 octane		.06

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright Stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1 20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28,1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§	51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (July 1, 1938)	1.32
Kentucky River (July 1, 1939)	1.40
Western Kentucky (June 22, 1938)	1.30

*Posted by Pure Oil Co.
†McClanahan P. L. and Simrall.
Midland, Mich. price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective June 13, 1938)

Bradford, Pa.	$1.80
Allegany, N. Y.	1.80

SOUTH PENN OIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.80
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.46
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.40
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.30
Corning Grade Oil in Buckeye Pipe Line Co., line (June 16, 1938)	1.17

PENNZOIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$1.73
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.72
Includes Tidioute district.	
Group C	1.71
Includes Turkey and Tidioute districts.	
Group D	1.70
Includes Bear Creek and Porkey districts.	
Group E	1.68
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective June 13, 1938)

Cabin Creek, W. Va.	$1.40
Bradford Hollow, W. Va.	1.40
Kelly Creek, W. Va.	1.40

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17
TURNER VALLEY NAPHTHAS AND CRUDE OIL	
(January 5, 1938, by Imperial Oil, Ltd.)	
Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62
These prices f.o.b. producers field tankage.	

*Imperial Oil, Ltd.

Crude Oil Price Changes

Effective July 1, Ashland Oil & Transportation Co. reduced the price of Eastern Kentucky crude oil 10 cents per barrel, making Big Sandy River, $1.32, and Kentucky River, $1.40.

Rocky Mountain Runs

Production estimates for the week ended July 2:

	Bbls.
WYOMING	
Salt Creek	15,630
Big Muddy	1,150
Badger Basin	170
Black Mountain	150
Byron	4,530
Dallas Derby	450
Dutton Creek	50
Elk Basin	30
Frannie	2,370
Garland	2,370
Grass Creek	2,840
G. P. dome	50
Hamilton dome	1,870
Hidden dome	130
Hudson	200
LaBarge	960
Lance Creek	12,020
Lost Soldier	1,820
Medicine Bow	3,220
Midway	40
Oregon Basin	3,140
Osage	780
Pilot Butte	20
Quealy dome	740
Rock River	1,920
South Casper	490
Spindletop	30
Poison Spider	260
Teapot	20
Warm Springs	110
Wertz	920
Total Wyoming	58,480
MONTANA	
Border	110
Cat Creek	550
Cut Bank	8,020
Dry Creek	580
Kevin-Sunburst	3,770
Pondera	700
Total Montana	13,730
COLORADO	
Florence	190
Fort Collins and Wellington	300
Iles dome	2,050
Moffat	330
Orchard	40
Rangely	100
Tow Creek	170
Price	570
Total Colorado	3,750
NEW MEXICO	
Cooper	4,340
Eaves	800
Eunice	22,330
Hardy	1,870
Hobbs	12,500
Jal	1,060
Langlie	3,430
Lynch	510
Lynn	780
Mattix	2,490
Monument	23,270
North Lynch	50
Penrose	4,790
Rhoades	130
Skelly	1,580
South Eunice	2,720
Vacuum	1,850
Artesia-Maljamar	5,440
Getty	100
Hogback	200
Rattlesnake	790
Table Mesa	80
Total New Mexico	91,070
Total Rocky Mountain region	167,030

Crude Prices by Gravities

	1 Oklahoma-Kansas	2 Oklahoma-Kansas	3 North and Central Texas	4 East Central Texas (Mexia district)	5 North Louisiana-Arkansas	6 Gray County, Texas	7 Hutchinson-Carson counties, Texas	8 Rodessa, Louisiana-Texas and Panola County, Texas	9 Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	10 Gulf Coast	11 Gulf Coast	12 Lea County, N. Mex West Texas, except Pecos County	13 Mirando district, Texas	14 Marion County, Texas	15 Refugio, Greta, Saxet, Taft, Texas	16 Anahuac, Flour Bluff, Dickson, Turtle Bay	17 White Castle, Louisiana	18 Iowa, Louisiana	19 Cayuga, Texas
Bel. 18	....	....	....	....	....	....	....	....	....	$.95	....	....	....	....	....	....	....	$ .90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1 01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$ .88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

New or Improved Equipment

Barnes "Bee" Portable Pump Is Useful in Long List of Jobs

A new light-weight self-priming, centrifugal pump is the Barnes "Bee," a 55-pound unit of many uses. The Barnes Manufacturing Co., Mans-

field, Ohio, is in production on the pump and is arranging for wide distribution through agents and dealers throughout the country.

The Barnes Bee is powered by either a Briggs & Stratton gasoline engine or a General Electric motor and it can be carried by hand to any job requiring quick removal of water. In addition to its use for contractors', roadbuilders' and other construction work, the Bee is said to be especially useful for displacing water from cellars, open pits and other possible sources of excess water.

Seaberg Made Sales Manager

George E. Seaberg has been appointed sales manager of the coupling and fitting division of the Pittsburgh Equitable Meter Co., Pittsburgh, Pa. This department is a newly created one. Mr. Seaberg for the past twelve years was associated with the Dresser Manufacturing Co. as manager of its water works division, and prior to that was with the Peoples Gas Light & Coke Co. of Chicago in an engineering capacity.

Bulletins, Booklets and Other Literature for the Trade

The current number of the All-Wheel Drive News, published by the Marmon-Herrington Co., Inc., Indianapolis, Ind., is designated as an extra. It tells about the company's expansion and occupation of its new plant.

Pyle-National Co., 1334-58 North Kostner Avenue, Chicago, is mailing on request a bulletin on the Pyle-National MC-5 turbo-generator.

Relation of design to the specific problems of production is discussed in the current number of the Byron Jackson News Letter, published by Byron Jackson Co., Los Angeles, Calif.

Homestead Valve Reference Book No. 38, announced by Homestead Valve Manufacturing Co., Inc., Coraopolis, Pa., features a more complete line of boiler blow-off valves; several new lines of lift-plug valves; more complete dimensions, tables, and facts about Homestead valves; and a new line of semisteel 500-pound O.W.G. (oil, water, gas) valves for the oil industry.

A booklet featuring the new Airco-DB No. 10 Radiagraph has been published by the Air Reduction Sales Co., 60 East Forty-second Street, New York. It explains the many new features and diversified cutting operations that can be done with this light-weight gas-cutting machine.

National Tank & Pipe Co., Portland, Ore., has issued two catalogs, one describing wood pipe, the other wood tanks. The Wood Pipe Handbook contains 265 pages and over 150 illustrations. Wood Tank Catalog 37 describes tank installations of a wide variety.

Among articles in the current number of Nickel Steel Topics, published by International Nickel Co., Inc., 67 Wall Street, New York, is one telling how nickel-chromium steel is used to provide the strength and toughness required in drawworks for deep drilling operations.

In a new 20-page engineering data book, Johns-Manville, 22 East Fortieth Street, New York, has made available full information on the J-M line of refractory products, including cements, castables and plastics, which this company has developed to meet the diversified requirements of modern industrial practice.

An article in the newest issue of Valve Values, published by the Edward Valve & Manufacturing Co., East Chicago, Ind., tells about the use of Edward forged valves in the oil field.

The story of Koppers Co., Pittsburgh, Pa., which in 24 years has become a manufacturer of products for almost every type of industry, is told in "Koppers Yearbook—1938." Primarily a processor of coal, the company performs all the operations necessary to obtain coke, coke-oven gas, tar, light oils, and chemicals which it and other industries convert into a long list of products.

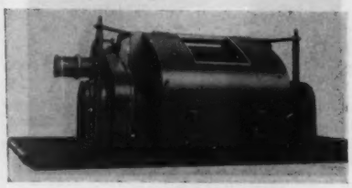
Houston Headquarters Building Is Opened by Schlumberger

Schlumberger Well Surveying Corp.'s headquarters building at 2720 Leeland Avenue, Houston,

Tex., was formally opened June 25. Several hundred friends and clients of the Schlumberger organization attended open house to help celebrate the occasion. The building, which contains 40,000 square feet of floor space, all air-conditioned, is modern in every respect.

Portability, Flexibility Features of Gumbo Buster Drawworks

The Gumbo Buster 66-6 unit drawworks, manufactured by American Well & Prospecting Co., and distributed by Bridgeport Machine Co., Wichita, Kans., is designed for medium-deep drilling where portability, low first cost and greater operating flexibility are desirable features. Its six-speed



flexibility permits its use for drilling to depths up to 4,500 feet. It is primarily for use with mechanical rigs, but may also be furnished for use with steam rigs. It is a two-post, two-shaft unit, fully enclosed, and mounted on heavy steel posts and frame. It has three speeds between the line-shaft and the drum-shaft and is equipped with two clutch drive sprockets on the line-shaft, making it the equivalent of a six-speed drawworks. It is roller-bearing equipped throughout, with both the line- and drum-shafts operating on heavy-duty straight roller bearings. Front equalized, patented compound braking mechanism gives ample leverage and a positive and easily controlled braking system. As in the other larger Gumbo Buster drawworks, proven features, such as the patented split steel drum-heads and sprockets, are used.

Treidler Goes to Los Angeles

E. B. Treidler, well known among industrial equipment buyers in New York and California, is now special representative for Air-Maze Corp., covering southern California and Arizona. He is handling the complete line of Air-Maze air-filters for oil-field engine and air-compressor applications. Until a few months ago Mr. Treidler was connected with the Alpha Steam Specialty Co., New York, an Air-Maze distributor. When the Harvey L. Laughlin Co. of Los Angeles was appointed factory representative for Air-Maze recently, Mr. Treidler joined it to take charge of the Air-Maze account.

Lincoln Offers New Electrode

Lincoln Electric Co., Cleveland, Ohio, announces a new electrode for construction of pressure vessels of high-tensile steel. The new electrode, designated Fleetweld No. 9 HT, has been developed for welding the new higher-tensile steels of 70,000 to 80,000 pounds per square inch tensile strength which are gradually replacing steels of 55,000 pounds per square inch in pressure-vessel construction.

In developing the new electrode, Lincoln engineers recognized the need for a rod suitable for welding deep-groove joints and capable of producing welds having higher tensile strength. Fleetweld No. 9 HT is said to produce weld metal which has extra strength and creep resistance at elevated temperatures.

Wear on Polish-Rod Reduced by Oscillating Stuffing-Box

An improved heavy-duty stuffing-box that provides an effective packing and at the same time minimizes wear and tear on the polish-rod is offered by Eastman Manufacturing Co., Dallas, Tex.

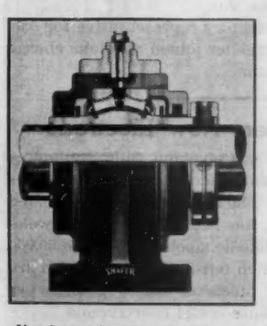
The stuffing-box simplifies lining up the beam on either a straight or crooked hole and definitely indicates whether the rods are centered under actual pumping conditions.

The oscillating or reciprocal movement on a horizontal plane within limitations of the tubing diameter permits the packing element to conform more nearly with the vertical position of the polish-rod without the usual binding. On crooked holes the oscillating member will travel from one side of the box to the other and return with the up-and-down stroke of the beam. The oscillating member of the unit, due to its freedom of movement, is especially adaptable for pumping wells that have any horizontal play in the walking-beam on the up-and-down stroke or show a jerking tendency.

The Eastman oscillating stuffing-box allows the polish-rod to align itself, so it naturally minimizes or eliminates the abnormal wear at the point where the polish-rod contacts the tubing on either the up- or down-stroke. This helps to eliminate holes wearing in the tubing as a result of friction from contact. It also prevents rapid deterioration of packing and reduces the number of broken or crystalized polish-rods.

Pillow-Block for Hard Service Is Put on Market by Shafer

Shafer Bearing Corp., 35 East Wacker Drive, Chicago, has developed a new line of pillow-blocks for heavy-duty services, embodying welded-steel housing construction and the superseal protection against difficult dirt conditions. Electrically welded steel construction provides a rugged housing of compact dimensions with bearings of ample capacity for severe applications. The double-row self-aligning roller bearing is mounted in a substantial cartridge housing containing the sealing members. This cartridge is then mounted in the welded steel frame. Bases are machined, and of four-bolt type.



The supersealed construction consists of three sealing members. An outer felt of special self-aligning type is free to float in the cover groove, and is always in uniform contact with the inner race of the bearing under any conditions of misalignment. Inner seal plates are mounted between covers and bearing, forming a bearing lubricant chamber. Washers are pressed on the inner race, and together with the inner seal plates form modified labyrinth seals.

Paranite Gasoline Hose Is Built to Withstand Action of Oils

Gasoline pump hose designed with a smooth inside to give a full, fast flow, to be light in weight, flexible, and to withstand crushing, has been placed on the market by Manhattan Rubber Manufacturing Division, Passaic, N. J.

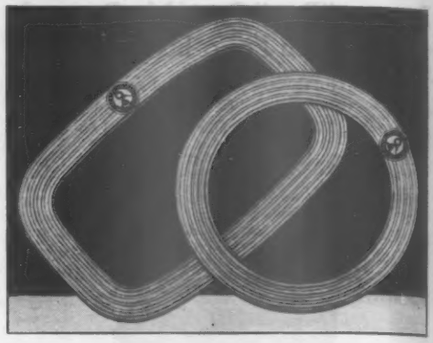
Paranite-G.O.P. gasoline pump hose, Style R-W has a nonswelling gasoline-proof synthetic tube which eliminates interior disintegration and protects the hose body from the destructive action of gasoline. It is of rugged construction with three strength members, two plies of braided cotton cord and a spiral of round hard steel wire, which are bound by rubber into a solid unit. Its gasoline- and oil-resistant cover will withstand rough service-station treatment and exposure. It is statically grounded from coupling to coupling.

Weco To Hold Open House

Well Equipment Manufacturing Co., manufacturer of Weco unions, will open its new building in Houston, Tex., Saturday, July 10. It will hold open house from 1 to 6 p.m., that day, and is extending an invitation to oil men generally to be its guests and inspect the building.

Metal-Asbestos Gasket Highly Resistant to Heat, Pressure

Goetze Gasket & Packing Co., Inc., New Brunswick, N. J., announces a new line of corrugated metal-asbestos gaskets treated with a special metallic compound which, it is claimed, adds greatly to the gasket's resistance to heat, pressure,



moisture, and corrosion. It is said also this metallic coating prevents the asbestos from sticking to flanges and minimizes damage to gaskets from handling. The company offers to send users sample gaskets to demonstrate their advantages, if requests are made on company letterheads.

Two pages in the latest number of Nickel Cast Iron News, 67 Wall Street, New York, are devoted to information about the use of nickel cast irons in diesel engines.

WHERE FAST, EXPENSIVE SHIPMENT WAS ECONOMICAL

Probably the highest charge ever made for an air express shipment, amounting to $2,500, has just been paid to cover the transportation of two Bantam roller bearings from South Bend, Ind., to Manila, Philippine Islands. Leaving South Bend via American Airlines, they were transferred to a United Airline plane in Chicago for San Francisco. From that city they left by Pan-American Transpacific Clipper for Manila. The air express charge was approximately three times the cost of the bearings. This is regarded as small, however, compared to a possible loss of $7,500 each day should a crippled dredge used for digging gold from 65 feet beneath a river bed break down.

Under stress of mining amidst water, slime and sludge, it was determined that the bearings were wearing out. A cablegram explaining the situation was sent to Bantam Bearings Corp., South Bend, Ind. To make sure of the exact requirements, A. H. Frauenthal, general manager of the Bantam company, talked by long distance with the engineer in charge at Manila 10,000 miles away. All details were made clear so that successful compliance with the order was assured. The bearings and parts, which ordinarily would take a month to produce, were made in nine days. Shipment, which ordinarily would take 28 days by fastest boat, was cut down to 5½ by Clipper ship.

Pipe-Vise Stand Equipped With Power Announced by Oster

Oster Manufacturing Co., Cleveland, Ohio, has announced a pipe-vise stand equipped with a power unit and chuck which enable the user to thread, cut and ream all sizes of pipe up to 2-inch by power. Pipe is gripped in a universal, bar-operated, scroll-type chuck and is revolved by the power unit concealed in the upper part of the stand on which the pipe vise usually is mounted.

The die-stock, cutter, or reamer is placed on the pipe in the conventional manner with the handles resting on sliding arms built in the sides of the stand. When the power is turned on, the sliding arms take the torque of the pipe tools as the threading, cutting-off, and reaming operations are performed.

In appearance and construction the new power vise stand is similar to the usual type used by plumbing and heating contractors. The power is furnished by a universal, variable-speed Black & Decker motor, geared to the spindle holding the chuck. The motor can be connected to the ordinary 110-volt lighting circuit. Without the legs, which can be removed, the net weight is 110 pounds, so that two men can lift it on or off a truck.

Storage and Use of Thin Brass Shim Stock Are Made Easier

An ingenious container, the Economy carton, introduced by Laminated Shim Co., Inc., Long Island, N. Y., facilitates the shop storage and use of thin brass shim stock. Packed within the carton is an assortment of the shim stock sizes most often needed, thus keeping them in one convenient place. The assortment includes four rolls 50 inches long, in .001-, .002-, .003-, and .005-inch thicknesses. This stock is a special shim brass, a precision product of the manufacturers of Laminum.

The shop or maintenance man simply pulls the thin shim stock through the carton slots and cuts it off as needed. Trouble in handling is eliminated; time is saved; wrinkling and waste of stock are prevented. A signal on each roll gives warning when that roll of shim stock is nearly exhausted, and suggests early reordering. The Economy carton, with its shim stock contents, catalogued as Brass Shim Stock Kit No. 88, is sold through mill supply houses and automotive jobbers.

Simplicity and Economy Mark Centrifugal Ejector Pump

For pumping water from depths of 150 feet or less, many operators have found the deep-well turbine pump expensive and the small pump-jacks often a source of trouble. With this in mind, Fairbanks, Morse & Co. has designed and built a complete line of centrifugal ejector pumps, the primary features of which are simplicity and economy.

These units require no lubrication and have no moving parts below surface except a foot-valve. They are offered either with motor-driven or V-belt-driven heads. Pressure tanks are offered as optional and though the engine-driven units are manually operated, the electric motor-driven units can be ordered with automatic start-stop pressure switch. With the elimination of the ejector feature from these units, an efficient, vertical centrifugal pump for shallow wells is obtained. The Continental Supply Co. is the exclusive distributor of Fairbanks-Morse equipment to the oil industry.

Here and There With Men Who Manufacture Equipment

Republic Steel Corp., Cleveland, Ohio, has appointed Union Hardware & Metal Co., Los Angeles, Calif., a distributor of Enduro stainless steel.

W. A. Lamons, formerly sales manager for Sterling Packing & Gasket Co., Inc., has been promoted to vice president and general manager. Mr. Lamons has had 13 years' experience in the oil-field trade of Texas, Oklahoma, Kansas and New Mexico.

Struthers-Wells Titusville Corp., with plants in Titusville and Warren, Pa., has appointed Hyman Ledeen, 747 Warehouse Street, Los Angeles, Calif., sales representative in Arizona, New Mexico, the lower part of California and the western part of Texas.

Blaw-Knox Co., Pittsburgh, Pa., appointed William P. Favorite, General Motors Building, Detroit, district representative for its power piping division, which designs and fabricates all types of piping for refineries, steel mills, power plants, etc.

W. C. Trout, president of the Lufkin Foundry & Machine Co., Lufkin, Tex., and A. V. Simonson, export manager, sailed on the Nieuw Amsterdam for a business trip to include Holland, Germany, France, England, and possibly Italy.

Pressure-Operated Perforator Is Addition to Homco Line

An improvement is offered in a new pressure-operated perforator added to the line of special tools of Homco Cutting and Fishing Service, a division of Houston Oil Field Material Co., 1524 Maury Street, Houston, Tex. The perforator blade of this tool is forced out by compounded hydraulics.

Run in the hole on drillpipe, the tool is actuated by fluid pressure exerted against a piston in the upper part of the tool. This piston drives a second piston in the lower part of the tool, through an 8½-to-1 area reduction, thereby compounding pressure in that same proportion. A 500-pound fluid pressure from the pumps is increased in this manner to 4,250 pounds pressure by the lower piston. The lower piston actuates the perforator blade driving it, through a simple mechanism, into the casing.

Correction

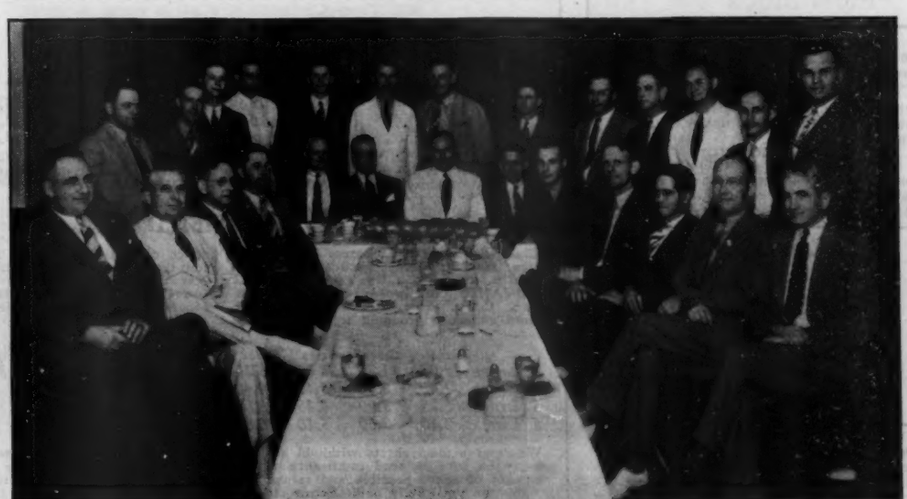
In a recent announcement of the opening of an American Iron & Machine Works Co. branch in Harvey, La., it was stated that George S. Hinkle, "former district manager" in Houston, would be manager. Mr. Hinkle is and has been the Gulf Coast manager. In this capacity he will supervise the activities of the new Harvey branch.

Making Special Spark Plugs

Defiance Spark Plug Corp., Toledo, Ohio, has diversified its manufacturing by including special brand spark plugs in chrome, cadmium, or conventional finish, with one or two ground electrodes. These are designed for passenger cars, trucks, tractors, motorcycles, outboards and for marine, stationary and industrial engines that have seen actual field service. It is important, with high-compression motors, to have the correct heat-range spark plug.

REPUBLIC RUBBER DIVISION MEN HOLD CONFERENCES

A series of conferences was held recently by the Republic Rubber Division of the Lee Rubber Tire Corp., Youngstown, Ohio, with the various sales divisions of its distributors, Frick-Reid Supply Corp. and Bovaird Supply Co., Tulsa; Hutchinson and McPherson, Kans., and Houston and Longview, Tex. These meetings were addressed by C. H. Zieme, service engineer of the Republic Rubber Division, who discussed all types of mechanical rubber applications in the oil industry, as well as factors of use and abuse encountered under various service conditions. The accompanying picture was taken at the Houston conference with the Frick-Reid Supply Corp.



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100 Acres, close to Dallas, about 50 acres landscaped, 5 acre lake, beautifully shrubbed at a cost of $27,000.00; balance in cultivation. Owners lodge and keepers quarters all modern. Barns, out houses, deep artesian well; 6 saddle horses, cows, sheep, etc. This is really a dream place and has taken several years to develop. For further information call or write Max Ploeger, Jr., Chas. E. Turner Co., Inc., 111 Murphy Street, Phone 7-8561, Dallas, Texas.

14,000 ACRES IN TAOS COUNTY New Mexico, about half valley, half mountain. Plenty of running water. Good ranch —or part of valley can be irrigated from the mountain water. Price attractive with terms. JOHN P. MATHIS, Box 1106, Amarillo, Texas.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years' experience. This physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Avenue, Torrance, California. Phone 983.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Help Wanted

WILL BUY list production company personnel and drilling contractors in Illinois, Michigan and Ohio. P. O. Box 2603, Tulsa.

WANTED
FOR OIL REFINERY AND OILFIELD WORK IN TRINIDAD, B. W. I.

(1) Senior Engineers with oilfield and/or refinery experience, must be fully qualified and suitable for administrative positions.

(2) Junior Engineers with sound technical and practical training, suitable for executive positions. Single men preferred.

(3) Chemists and chemical engineers, fully qualified, preferably with sound knowledge of modern oil refinery practice.

Applicants are to apply in triplicate and give full details of qualifications, experience, etc., inciuding the following:

Age; Date and Place of birth; Nationality; Married or single; Education; Technical Training; Practical experience and positions held, with dates and full details; Present or last position, with full details of responsibility and control; Salary expected; References—only copies of testimonials should be sent, photographs if possible; Membership of Technical or Scientific Societies; Games played. Address

Box J-472
The Oil and Gas Journal
415 Lexington Ave., New York, N. Y.

Situations Wanted

PRODUCTION Foreman. Age 38. At present foreman 35,000 bbls. 20 years' experience. Multiple stage Oil and Gas separation, Oil Metering, latest methods of Gas-lift, deep well pumping, bottom hole pressure study. Logical reason for desiring change. Present employer as reference. Address Box J-541, The Oil and Gas Journal, Tulsa, Oklahoma.

ATTY.-Credit Man—12 yrs.' experience in credits, liquidation, reorganization of business concerns. Practice in State and Fed. Courts. Have excellent library. Past 3 yrs. employed by Producing Company in title, statistical and tax work. Available on short notice. Address Box J-469, The Oil and Gas Journal, Tulsa, Oklahoma.

GRADUATE engineer, 20 yrs.' exp. Oil and Gas, 3 yrs. with state regulatory comm. wants pos. with prod. co. Now employed, desires change. Address Box J-461, The Oil and Gas Journal, Tulsa, Oklahoma.

DIRECTED READER INTEREST
Your ad in these columns will be read by more oil-minded readers than in any other medium in the world. Direct your advertising to these readers through the regular use of this service.
THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

PETROLEUM ENGINEER, 13 years with same major oil company, 5 years California, 8 years Java, Borneo, Venezuela, wide practical experience and theoretical knowledge Drilling, Production, Geology, B.Sc. London University, A.R.S.M. Royal School of Mines, London, Oil Technology. Age 36, married, English. Resigning present position Venezuela middle August, offers services. Fully capable of undertaking complete responsibility for oilfield development. Address Box J-463, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE GEOLOGIST, 10 years' experience, surface and subsurface geology and geophysics, in Texas, Wyoming and Illinois, desires permanent connection with responsible company as geologist or scout. Address Box J-471, The Oil and Gas Journal, Tulsa, Oklahoma.

ACCOUNTANT
My present employer (former U. S. Senator, capitalist, promoter and controlling factor in many enterprises) expresses his intention of curtailing his varied business interests with retirement as the ultimate objective.

Decreasing activity and eventual dissolution do not represent a future program of interest to me therefore, my services are available to a distributor of petroleum products wherein my 3 years of activity in this line plus 17 years of additional accounting and general business experience may aid in rounding out a smoothly functioning organization.

To a company contemplating the acquisition of a man grounded in bookkeeping, office management, general and cost accounting, as well as the ordinary requirements of state and federal taxation. I shall be pleased to communicate details without obligation to the inquirer.

Age 40; married; high, business and accounting schools education; protestant; excellent health; confirmed teamworker; will locate where required.

Address Box J-470
The Oil and Gas Journal, Tulsa, Okla.

Business Opportunities

THERE will be a big play in Northwest Red River County 30 or 60 days, if interested write me. W. H. Upton, Paris, Texas.

WHY USE Ten thousand gallons acid per well. Want some reliable parties or company finance and handle new patented method Chemical-Bomb treating Oil and gas wells. This new method enables the unspent acids to penetrate the Fractured formation several times further than present treating methods. And assures a more successful treatment with less than half the expense. Address Box J-474, The Oil and Gas Journal, Tulsa, Oklahoma.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

BOILERS — PIPE — REFINERY EQUIPMENT

6—150 H.P. Brownell, Horizontal, Return Firetube Boilers. Price $600.00 each, F.O.B. cars, Tulsa, Oklahoma.
2—350 H.P. Babcock-Wilcox, Water Tube Boilers, Sterling type 200-lb. pressure, complete with boiler feed water pumps, fuel oil pumps and boiler feed water heater, price $6,000.00 for both, F.O.B. cars, Guthrie, Oklahoma.
10,000 ft.—15 1/2" Surface casing, 1/4" wall thickness, 30' joints, collar on one end, located at
Tulsa, Oklahoma—Warehouse

COMPLETE STOCK STORAGE TANKS & REFINERY EQUIPMENT

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry or H. J. Galamba
Riverview at Second,
Kansas City, Kan.

J. O. Isaacks
Hays, Kansas

Robt. W. Duden
2100 S. Union,
Tulsa, Okla.

OFFERING

WILSON PORTABLE DRILLING RIG

Consisting of:

Wilson Giant Draw-works.
Two 173 H.P. Buda Diesel Engines.
7¾ x 14 Wilson-Snyder Pump.
Dreadnaught R. B. Crown Block.
72" R. B. Traveling Block.
8" Enclosed Rotary Hook.
Lucey "E" 6000 Swivel.
Lucey R. B. Rotary Table.
B. J. Weldless Links.
B. J. Type "C" Elevators.
Martin-Decker Weight Indicator.
Light Plant.
3,500 ft. of J. & L. 4½-inch Integral Joint Drill Pipe.

Other Items necessary to complete rig.

Terms if desired.

MELTON SUPPLY CO.
Phone 312
Seminole, Oklahoma

TRACTORS

Government crawler type Caterpillars 5 ton $375, 10 ton $695. Slightly used. Perfect condition.

O. C. EVANS
Mt. Sterling, Ky.

TANK CARS

33 8,000 gals.
61 10,000 gals.
Class 2. Built 1915, 16 & 17
Cast Steel Truck Sides
Very good condition
Tank Car Tanks, too.

IRON & STEEL PRODUCTS, Inc.
Chicago (Hegewisch Sta.), Ill.

WELDER DEMONSTRATORS. Used and new. Electric or Gasoline engine drive. Thoroughly guaranteed. 30 Days' Trial. Terms if desired. Hobart Welder Exchange, Box OG-2, Troy, Ohio.

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25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio

FOR SALE: At our Oklahoma City garage, "75" Allis-Chalmers crawler type tractor with M-75 front end Braden winch mounted thereon. Used for servicing Oklahoma City wells. $1,500.00. I. T. I. O., Bartlesville, Oklahoma.

125,000 feet 10¾" O D Forty Pound Used Wrought Iron Line Pipe With Threads and Couplings. Cleaned. Located Kokomo, Indiana District.

STANDARD OIL FIELD SUPPLY COMPANY
P. O. Box 863 Houston, Texas.

Equipment Wanted

WANTED — Gasoline powered rotary drilling rig, capable of going 4,000 feet. Will pay cash for good bargain. Give full description. W. P. Luse, Magnolia Building, Dallas, Texas.

WANTED: Used Waukesha standard ASTM-CFR Octane testing unit. FELDMAN PETROLEUM CO., 2250 So. Ashland Ave., Chicago, Illinois.

WANTED—Used Thrift Hydraulic Pipe Pulling Outfit. State price and condition. Address Box J-462, The Oil and Gas Journal, Tulsa, Oklahoma.

Mailing Lists

ROYALTY Lists. Unit Owners Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Legal Blanks

Since 1908 Burkhart's legal forms have served the Oil Industry—Free catalog & samples. Burkhart Printing & Sta. Co., 115 So. Cincinnati, Tulsa, Oklahoma.

MOVE THAT IDLE EQUIPMENT BY LISTING IT IN THE ACCEPTED MARKET PLACE OF THE OIL INDUSTRY . . .

CLASSIFIED ADS IN THE OIL AND GAS JOURNAL HAVE BROUGHT BUYER AND SELLER TOGETHER FOR MORE THAN 30 YEARS—AND STILL DOING IT.

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only
GRIMES ROYALTY CO.
Hunt Bldg. Tulsa, Okla.

ROYALTIES—ADEQUATE RESERVES
G. D. TERRIEN
412 Central Bank Bldg., Tulsa, Okla.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Hobbs, New Mexico.

ROYALTIES PURCHASING TRUST, LTD., Moorgate Hall, Moorgate London, E. C. 2., England, are buyers of producing oil royalties.

WRITE US TODAY
For our offering of producing and nonproducing oil royalties.
RUBUSH and COMPANY
1307 Pacific Ave. Dallas, Texas.

FOR SALE: 1 to 7 A. Royalty of my ⅛ Undiv. Int. SE ¼, S. 1, T. 10, R. 1w, Cleveland Co. Land not leased. Mrs. Anderson, 4907 SE Mrkt St., Portland, Ore.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
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32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
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34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
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Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

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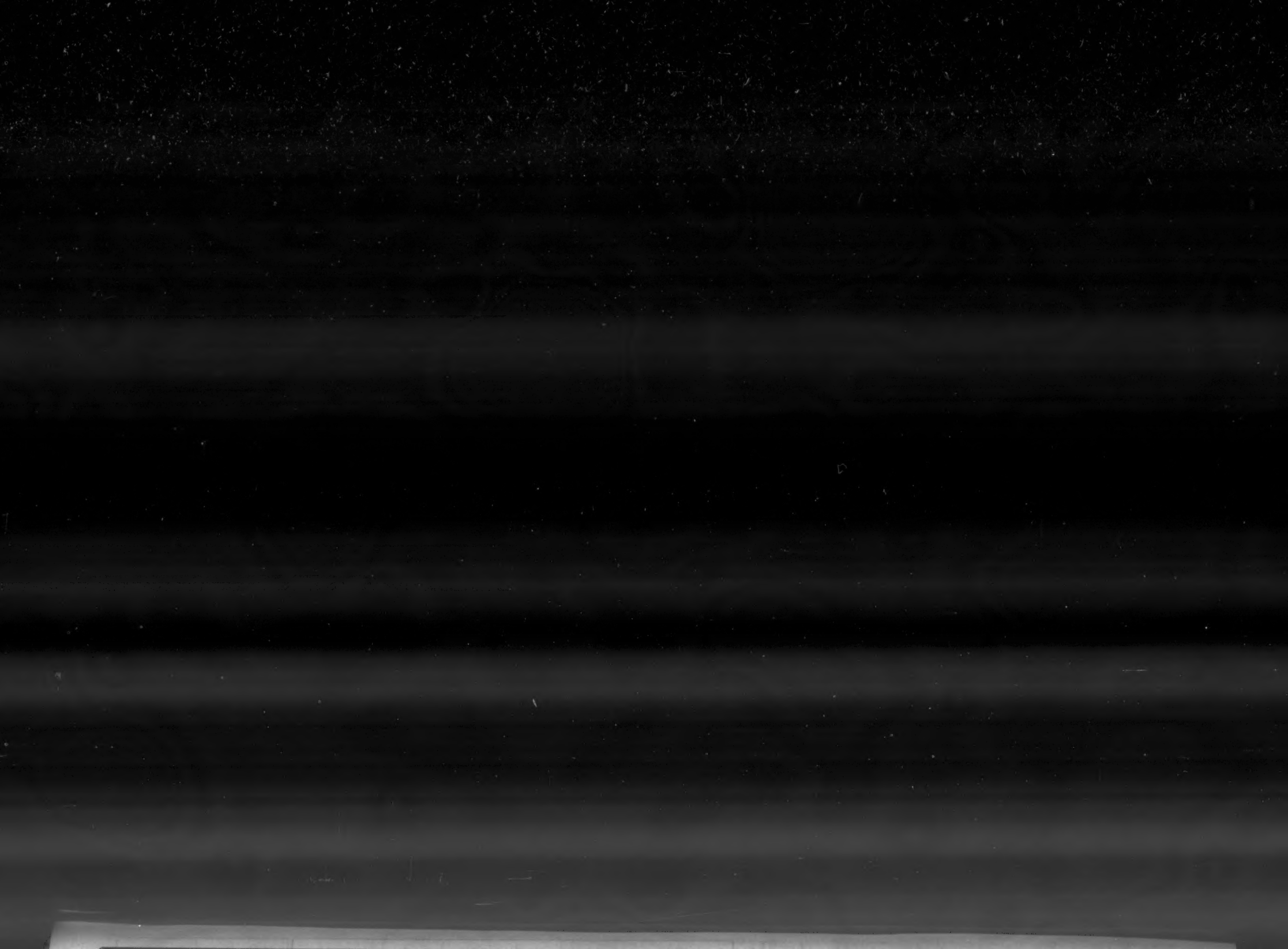


Wear on Polish-Rod Reduced by Oscillating Stuffing-Box

An improved heavy-duty stuffing-box that provides an effective packing and at the same time minimizes wear and tear on the polish-rod is of-

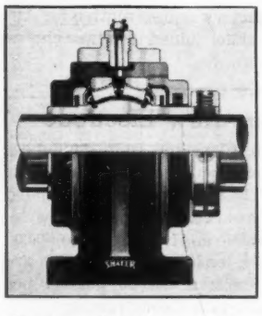
fered by Eastman Manufacturing Co., Dallas, Tex. The stuffing-box simplifies lining up the beam on either a straight or crooked hole and definitely indicates whether the rods are centered under actual pumping conditions.

The oscillating or reciprocal movement on a horizontal plane within limitations of the tubing diameter permits the packing element to conform more nearly with the vertical position of the polish-rod without the usual binding. On crooked holes the oscillating member will travel from one side of the box to the other and return with the up-and-down stroke of the beam. The oscillating member of the unit, due to its freedom of movement, is especially adaptable for pumping wells that have any horizontal play in the walking-beam on the up-and-down stroke or show a jerking tendency.

The Eastman oscillating stuffing-box allows the polish-rod to align itself, so it naturally minimizes or eliminates the abnormal wear at the point where the polish-rod contacts the tubing on either the up- or down-stroke. This helps to eliminate holes wearing in the tubing as a result of friction from contact. It also prevents rapid deterioration of packing and reduces the number of broken or crystalized polish-rods.

Pillow-Block for Hard Service Is Put on Market by Shafer

Shafer Bearing Corp., 35 East Wacker Drive, Chicago, has developed a new line of pillow-blocks for heavy-duty services, embodying welded-steel housing construction and the superseal protection against difficult dirt conditions. Electrically welded steel construction provides a rugged housing of compact dimensions with bearings of ample capacity for severe applications. The double-row self-aligning roller bearing is mounted in a substantial cartridge housing containing the sealing members. This cartridge is then mounted in the welded steel frame. Bases are machined, and of four-bolt type.



The supersealed construction consists of three sealing members. An outer felt of special self-aligning type is free to float in the cover groove, and is always in uniform contact with the inner race of the bearing under any conditions of misalignment. Inner seal plates are mounted between covers and bearing, forming a bearing lubricant chamber. Washers are pressed on the inner race, and together with the inner seal plates form modified labyrinth seals.

Paranite Gasoline Hose Is Built to Withstand Action of Oils

Gasoline pump hose designed with a smooth inside to give a full, fast flow, to be light in weight, flexible, and to withstand crushing, has been placed on the market by Manhattan Rubber Manufacturing Division, Passaic, N. J.

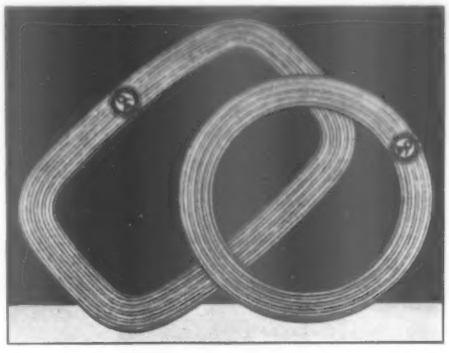
Paranite-G.O.P. gasoline pump hose, Style R-W has a nonswelling gasoline-proof synthetic tube which eliminates interior disintegration and protects the hose body from the destructive action of gasoline. It is of rugged construction with three strength members, two plies of braided cotton cord and a spiral of round hard steel wire, which are bound by rubber into a solid unit. Its gasoline- and oil-resistant cover will withstand rough service-station treatment and exposure. It is statically grounded from coupling to coupling.

Weco To Hold Open House

Weil Equipment Manufacturing Co., manufacturer of Weco unions, will open its new building in Houston, Tex., Saturday, July 10. It will hold open house from 1 to 6 p.m., that day, and is extending an invitation to oil men generally to be its guests and inspect the building.

Metal-Asbestos Gasket Highly Resistant to Heat, Pressure

Goetze Gasket & Packing Co., Inc., New Brunswick, N. J., announces a new line of corrugated metal-asbestos gaskets treated with a special metallic compound which, it is claimed, adds greatly to the gasket's resistance to heat, pressure,



moisture, and corrosion. It is said also this metallic coating prevents the asbestos from sticking to flanges and minimizes damage to gaskets from handling. The company offers to send users sample gaskets to demonstrate their advantages, if requests are made on company letterheads.

Two pages in the latest number of Nickel Cast Iron News, 67 Wall Street, New York, are devoted to information about the use of nickel cast irons in diesel engines.

WHERE FAST, EXPENSIVE SHIPMENT WAS ECONOMICAL

Probably the highest charge ever made for an air express shipment, amounting to $2,500, has just been paid to cover the transportation of two Bantam roller bearings from South Bend, Ind., to Manila, Philippine Islands. Leaving South Bend via American Airlines, they were transferred to a United Airline plane in Chicago for San Francisco. From that city they left by Pan-American Transpacific Clipper for Manila. The air express charge was approximately three times the cost of the bearings. This is regarded as small, however, compared to a possible loss of $7,500 each day should a crippled dredge used for digging gold from 65 feet beneath a river bed break down.

Under stress of mining amidst water, slime and sludge, it was determined that the bearings were wearing out. A cablegram explaining the situation was sent to Bantam Bearings Corp., South Bend, Ind. To make sure of the exact requirements, A. H. Frauenthal, general manager of the Bantam company, talked by long distance with the engineer in charge at Manila 10,000 miles away. All details were made clear so that successful compliance with the order was assured. The bearings and parts, which ordinarily would take a month to produce, were made in nine days. Shipment, which ordinarily would take 28 days by fastest boat, was cut down to 5½ by Clipper ship.

Pipe-Vise Stand Equipped With Power Announced by Oster

Oster Manufacturing Co., Cleveland, Ohio, has announced a pipe-vise stand equipped with a power unit and chuck which enable the user to thread, cut and ream all sizes of pipe up to 2-inch by power. Pipe is gripped in a universal, bar-operated, scroll-type chuck and is revolved by the power unit concealed in the upper part of the stand on which the pipe vise usually is mounted.

The die-stock, cutter, or reamer is placed on the pipe in the conventional manner with the handles resting on sliding arms built in the sides of the stand. When the power is turned on, the sliding arms take the torque of the pipe tools as the threading, cutting-off, and reaming operations are performed.

In appearance and construction the new power vise stand is similar to the usual type used by plumbing and heating contractors. The power is furnished by a universal, variable-speed Black & Decker motor, geared to the spindle holding the chuck. The motor can be connected to the ordinary 110-volt lighting circuit. Without the legs, which can be removed, the net weight is 110 pounds, so that two men can lift it on or off a truck.

Storage and Use of Thin Brass Shim Stock Are Made Easier

An ingenious container, the Economy carton, introduced by Laminated Shim Co., Inc., Long Island, N. Y., facilitates the shop storage and use of thin brass shim stock. Packed within the carton is an assortment of the shim stock sizes most often needed, thus keeping them in one convenient place. The assortment includes four rolls 50 inches long, in .001-, .002-, .003-, and .005-inch thicknesses. This stock is a special shim brass, a precision product of the manufacturers of Laminum.

The shop or maintenance man simply pulls the thin shim stock through the carton slots and cuts it off as needed. Trouble in handling is eliminated; time is saved; wrinkling and waste of stock are prevented. A signal on each roll gives warning when that roll of shim stock is nearly exhausted, and suggests early reordering. The Economy carton, with its shim stock contents, catalogued as Brass Shim Stock Kit No. 88, is sold through mill supply houses and automotive jobbers.

Simplicity and Economy Mark Centrifugal Ejector Pump

For pumping water from depths of 150 feet or less, many operators have found the deep-well turbine pump expensive and the small pump-jacks often a source of trouble. With this in mind, Fairbanks, Morse & Co. has designed and built a complete line of centrifugal ejector pumps, the primary features of which are simplicity and economy.

These units require no lubrication and have no moving parts below surface except a foot-valve. They are offered either with motor-driven or V-belt-driven heads. Pressure tanks are offered as optional and though the engine-driven units are manually operated, the electric motor-driven units can be ordered with automatic start-stop pressure switch. With the elimination of the ejector feature from these units, an efficient, vertical centrifugal pump for shallow wells is obtained. The Continental Supply Co. is the exclusive distributor of Fairbanks-Morse equipment to the oil industry.

Here and There With Men Who Manufacture Equipment

Republic Steel Corp., Cleveland, Ohio, has appointed Union Hardware & Metal Co., Los Angeles, Calif., a distributor of Enduro stainless steel.

W. A. Lamons, formerly sales manager for Sterling Packing & Gasket Co., Inc., has been promoted to vice president and general manager. Mr. Lamons has had 13 years' experience in the oil-field trade of Texas, Oklahoma, Kansas and New Mexico.

Struthers-Wells Titusville Corp., with plants in Titusville and Warren, Pa., has appointed Hyman Ledeen, 747 Warehouse Street, Los Angeles, Calif., sales representative in Arizona, New Mexico, the lower part of California and the western part of Texas.

Blaw-Knox Co., Pittsburgh, Pa., appointed William P. Favorite, General Motors Building, Detroit, district representative for its power piping division, which designs and fabricates all types of piping for refineries, steel mills, power plants, etc.

W. C. Trout, president of the Lufkin Foundry & Machine Co., Lufkin, Tex., and A. V. Simonson, export manager, sailed on the Nieuw Amsterdam for a business trip to include Holland, Germany, France, England, and possibly Italy.

Pressure-Operated Perforator Is Addition to Homco Line

An improvement is offered in a new pressure-operated perforator added to the line of special tools of Homco Cutting and Fishing Service, a division of Houston Oil Field Material Co., 1524 Maury Street, Houston, Tex. The perforator blade of this tool is forced out by compounded hydraulics.

Run in the hole on drillpipe, the tool is actuated by fluid pressure exerted against a piston in the upper part of the tool. This piston drives a second piston in the lower part of the tool, through an 8½-to-1 area reduction, thereby compounding pressure in that same proportion. A 500-pound fluid pressure from the pumps is increased in this manner to 4,250 pounds pressure by the lower piston. The lower piston actuates the perforator blade driving it, through a simple mechanism, into the casing.

Correction

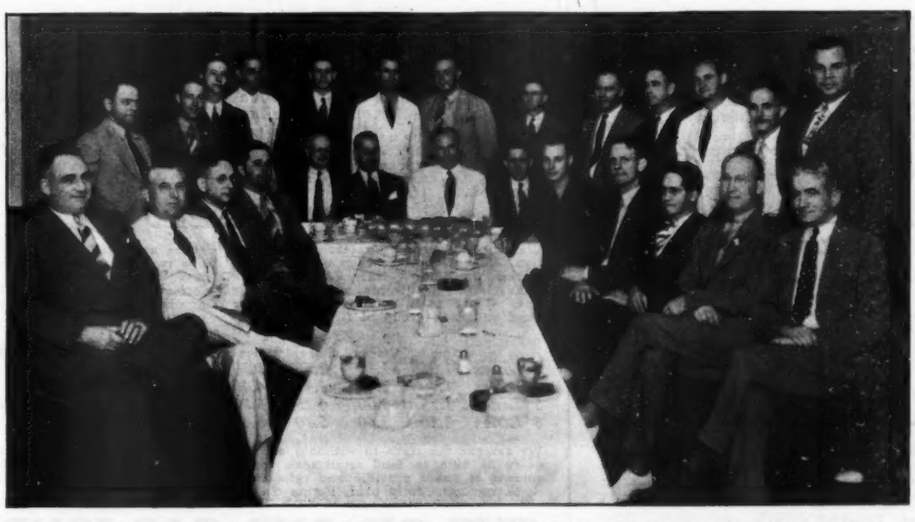
In a recent announcement of the opening of an American Iron & Machine Works Co. branch in Harvey, La., it was stated that George S. Hinkle, "former district manager" in Houston, would be manager. Mr. Hinkle is and has been the Gulf Coast manager. In this capacity he will supervise the activities of the new Harvey branch.

Making Special Spark Plugs

Defiance Spark Plug Corp., Toledo, Ohio, has diversified its manufacturing by including special brand spark plugs in chrome, cadmium, or conventional finish, with one or two ground electrodes. These are designed for passenger cars, trucks, tractors, motorcycles, outboards and for marine, stationary and industrial engines that have seen actual field service. It is important, with high-compression motors, to have the correct heat-range spark plug.

REPUBLIC RUBBER DIVISION MEN HOLD CONFERENCES

A series of conferences was held recently by the Republic Rubber Division of the Lee Rubber Tire Corp., Youngstown, Ohio, with the various sales divisions of its distributors, Frick-Reid Supply Corp. and Bovaird Supply Co., Tulsa; Hutchinson and McPherson, Kans., and Houston and Longview, Tex. These meetings were addressed by C. H. Zieme, service engineer of the Republic Rubber Division, who discussed all types of mechanical rubber applications in the oil industry, as well as factors of use and abuse encountered under various service conditions. The accompanying picture was taken at the Houston conference with the Frick-Reid Supply Corp.



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ACCOUNTANT
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Decreasing activity and eventual dissolution do not represent a future program of interest to me therefore, my services are available to a distributor of petroleum products wherein my 3 years of activity in this line plus 17 years of additional accounting and general business experience may aid in rounding out a smoothly functioning organization.

To a company contemplating the acquisition of a man grounded in bookkeeping, office management, general and cost accounting, as well as the ordinary requirements of state and federal taxation. I shall be pleased to communicate details without obligation to the inquirer.

Age 40; married; high, business and accounting schools education; protestant; excellent health; confirmed teamworker; will locate where required.

Address Box J-470
The Oil and Gas Journal, Tulsa, Okla.

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Tulsa, Oklahoma